

Re-Inventing Japan Project  
大学の世界展開力強化事業

Inter-university Exchange Program toward Medical and Dental Networking  
in Southeast Asia

東南アジア医療・歯科医療ネットワークの構築を目指した大学間交流プログラム

国際セミナーⅦ

若手研究者による講義シリーズ

English Lecture Series on Dental Science and Education  
by Young Academic Staffs

2015年10月



東京医科歯科大学  
TOKYO MEDICAL AND DENTAL UNIVERSITY

## 目次

ページ

I. 講義概要 Outline of lectures	1
II. 講義スケジュール Schedule of lectures	2
III. 講義内容及び学生による報告書 PPT & Reports from students	3
1. 竹原特任助教	3-11
“Dental education, Dental workforce, and Oral Health Status in Japan”	
2. 石田特任助教	12-25
“TMDU Orthodontics”	
3. 猪越助教	26-37
“Introduction of Gerodontology and Oral Rehabilitation”	
4. 青山助教	38-48
“Periodontal Medicine –Influence of periodontitis on systemic health”	
5. 關助教等	49-58
“Introduction of TMDU –Graduate School of Medical and Dental Science”	
IV. 写真 Pictures	59-60

平成27年度大学の世界展開力強化事業  
にかかると手研究者による講義シリーズの概要について

本学は平成24年10月より大学の世界展開力強化事業「東南アジア医療・歯科医療ネットワークの構築を目指した大学間交流プログラム」に取り組んでいる。今年度のTMDU Dental Training Program 2015の開催にあたっては、本学の若手研究者の語学力向上・育成を目的として、招聘対象であるチュラロンコーン大学、シーナカリンウィロート大学、インドネシア大学、ホーチミン医科薬科大学計30名の歯学生に対し、若手研究者による英語の講義を5回に渡り実施した。日本の歯学教育、歯科医療事情や各分野の最新研究について講義し、また、本学の留学生活について紹介した。

実施日程

1. 10月14日(月) 9:00~9:30  
“Dental education, Dental workforce, and Oral Health Status in Japan”  
国際交流センター 竹原 祥子 特任助教
2. 10月15日(火) 9:00~9:30  
“TMDU Orthodontics”  
国際交流センター 石田 雄之 特任助教
3. 10月19日(月) 9:00~9:30  
“Introduction of Gerodontology and Oral Rehabilitation”  
高齢者歯科学分野 猪越 正直 助教
4. 10月21日(水) 9:00~9:30  
“Periodontal Medicine –Influence of periodontitis on systemic health”  
歯周病学分野 青山 典生 助教
5. 10月22日(木) 9:00~9:30  
“Introduction of TMDU –Graduate School of Medical and Dental Science”  
歯学教育開発学分野 關 奈央子 助教  
口腔病理学分野 Dr. Nguyen Thi Kim Chi  
インプラント・口腔再生医学分野 Dr. Lia Kartika Wulansari  
口腔放射線医学分野 Dr. Supak Ngamsom

# TMDU Dental Training Program 2015

	1	2	3	4	5	6	7
Date	October 12, 2015 Mon(Holiday)	October 13, 2015 Tue	October 14, 2015 Wed	October 15, 2015 Thu	October 16, 2015 Fri	October 17, 2015 Sat	October 18, 2015 Sun
AM	Arrival	9:30 Opening ceremony Orientation @Special LectureHall 4F,Dental Bldg North 12:00-13:00 Welcome Lunch	9:00-9:30 Lecture (Dr. Takehara)	9:00-9:30 Lecture (Dr. Ishida)	9:30-11:40 Teamwork Activity	Japanese Culture Experience	Japanese Culture Experience
PM		13:00- Dental material company visit	13:30-15:30 Visiting basic science laboratory/clinic②	13:30-15:30 Visiting basic science laboratory/clinic④			
15:30-16:00		Report	Report	Report			

	8	9	10	11	12	13	14
Date	October 19, 2015 Mon	October 20, 2015 Tue	October 21, 2015 Wed	October 22, 2015 Thu	October 23, 2015 Fri	October 24, 2015 Sat	October 25, 2015 Sun
AM	9:00-9:30 Lecture (Dr.Inokoshi)	9:30- Research Day @9F, Bldg#1 West with TMDU D4 students	9:00-9:30 Lecture (Dr. Aoyama)	9:00-9:30 Lecture (Dr.Seki etc.)	9:00-11:00 IT simulation learning with TMDU D4 students @Practical room (Bldg 7, 5F)	Japanese Culture Experience	Departure
PM	10:00-12:00 Visiting basic science laboratory/clinic		10:00-12:00 visiting basic science laboratory/clinic⑦	10:00-12:00 Visiting basic science laboratory/clinic⑨	12:50-15:55 International Symposium & Cultural Show withTMDU D2, D3, D4 @Gymnastic Hall, 6F Bldg#5		
15:30-16:00	13:30-15:30 Visiting basic science laboratory/clinic⑥		Report	Report	16:30-17:30 Evaluation Committee 18:00-20:00 Closing Ceremony & Party (Certificate Presentation) @Faculty Lounge, 26F M&D Tower (Report)		

1. 10/14(水) 健康推進歯学分野 竹原 祥子 特任助教

*“Dental education, Dental workforce, and Oral Health Status in Japan”*

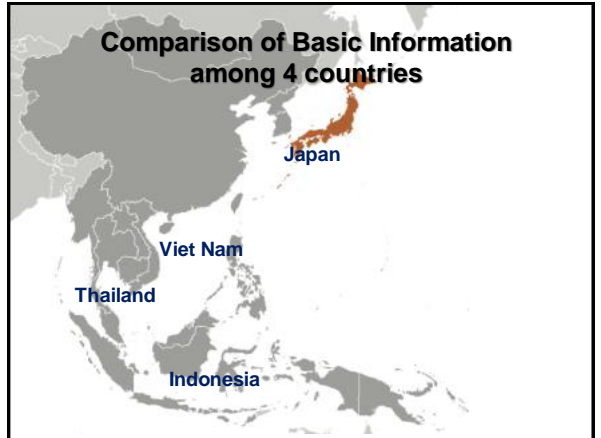


### Dental Education, Dental Workforce, and Oral Health Status in Japan

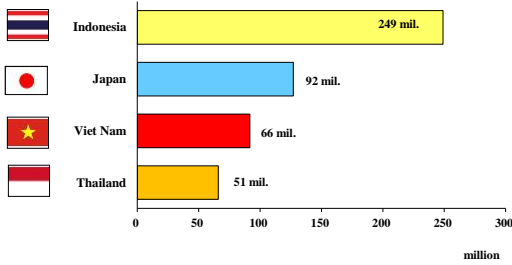


Tokyo Medical and Dental University  
Sachiko Takehara

### Comparison of Basic Information among 4 countries

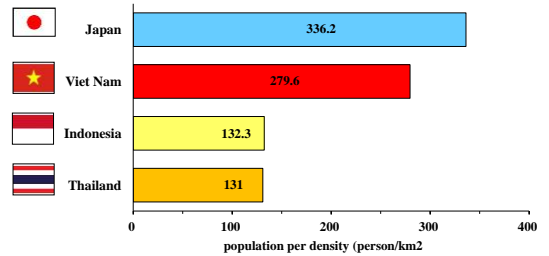


### Population



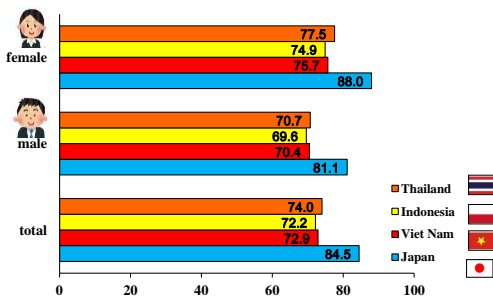
CIA the World Fact (2013)

### Population Density



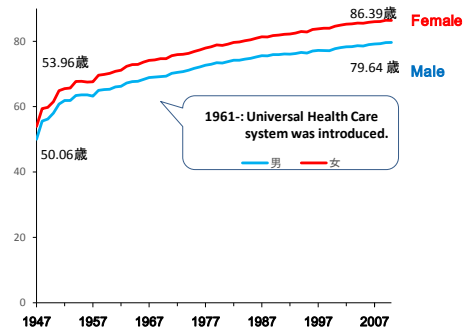
CIA the World Fact (2014)

### Life expectancy at birth



CIA the World Fact (2013)

### Japanese Life Expectancy

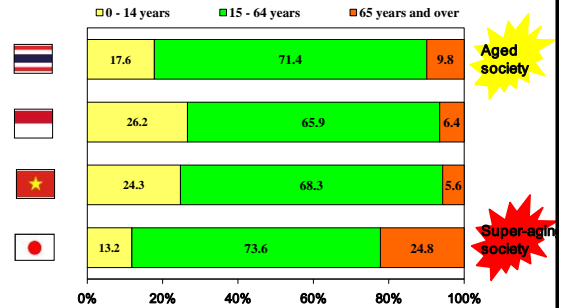


### Total Fertility Rate

	Indonesia	2.15
	Viet Nam	1.83
	Thailand	1.51
	Japan	1.4

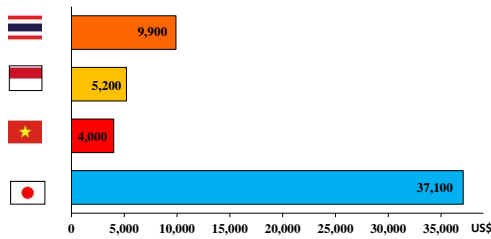
The world fact book 2015

### Age structure



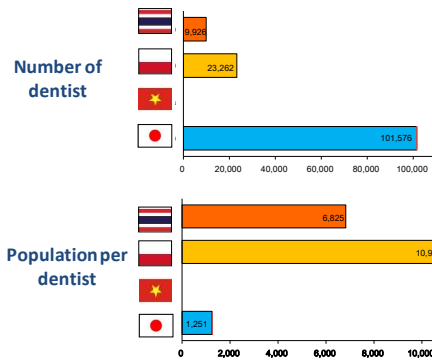
CIA the World Fact (2013)

### GDP per capita (2012 US\$)

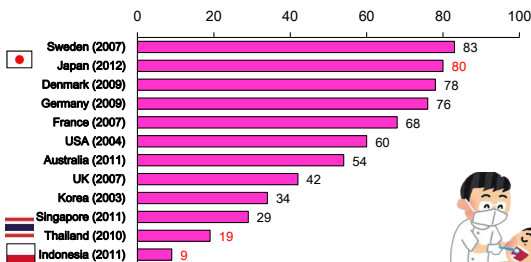


CIA the World Fact (2013)

### Number of Dentists



### Number of dentists per 100,000 population



### Dentists in Japan (2010)

	Number	%
<b>Dental practice</b>	<b>98,723</b>	<b>97.2%</b>
Private dentists	60,100	59.2%
Employed dentists	26,185	25.2%
Hospital dentists	2,914	2.8%
Education institute	9,524	9.4%
Research institute	1,151	1.0%
<b>Administration/public service</b>	<b>271</b>	<b>0.3%</b>
Others	1,427	1.4%
<b>Total</b>	<b>101,576</b>	<b>100.0%</b>

Female dentists: 20.8%



## Dental Education, Dental Workforce, and Oral Health Status in Japan



## Comparison of Dental Schools

	Thailand	Indonesia	Viet Nam	Japan
Number of Dental School	11 national 3 private (5 new dental schools have opened since 2014.)	15 national 15 private	7 national	national: 11 public: 1 private: 17
Duration	6 years	5 years (2013~6 years)	6 years	6 years

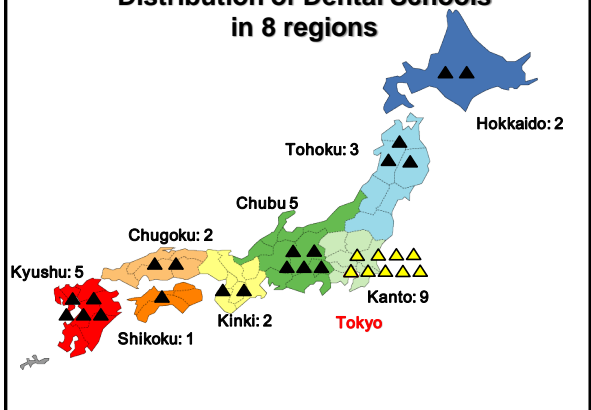
## Dental Education in Japan



- 29 dental schools  
approx. 2,800 students/year
- 6-year-course
- Admission fee and tuition for education  
\$ 35,000 : national & public school  
\$300,000 : private school

\$1=¥100

## Distribution of Dental Schools in 8 regions



## Types of major dental workforce in Japan

1. Dentist
2. Dental Hygienist (3 - 4 year course)  
Major jobs of DH



Preventive treatment  
(prophylaxis, topical fluoride application)



Oral health education



Assisting dentists

3. Dental Technician  
Work under the prescription of dentists






## Types of dental workforce

	Thailand	Indonesia	Viet Nam	Japan
Dentist	○	○	○	○ ✓
Dental Hygienist				○ ✓
Dental Nurse	○		○	
Dental Assistant	○		○	○
Dental Technician	○	○	○	○ ✓

✓ Qualification required



### Health related laws in Japan

Law	Target	Activities
Maternal and Child Health Law	 Pregnant women Babies	Health examination for 18-month-old & 3-year-old children
School Health and Safety Law	 School children	Health examination and health education at school
Labor and Safety Health Law	 Employees	•Worksite health examination and total health promotion activities •Periodontal disease examination.
Act on Assurance of Medical Care for Elderly People	 Adults (> 40 yrs)	Health examination and health promotion activities.
Long-Term Care Insurance Act	 Adults with special needs	Prevention of oral diseases

Law	Target	Activities
Health Promotion Law	All residents	• Introduced in 2002. • Conducting Nutrition and Health Survey • Preventing passive smoking
Oral Health Law	All residents	• Introduced in 2011. • Preventing oral diseases



### Health Care System in Japan



- It provides oral health services for every generation eg. pregnant women, preschool children
- Public oral health services are provided by public dentists as well as private practitioners.
- National oral health survey is conducted regularly since 1957. The recent survey was in 2011, and this was 10th survey. It includes questionnaire and oral examination.

### National health insurance in Japan

- National health insurance covers medical and dental care, and pharmacy services for all residents in Japan.
- Patients can visit private clinics or hospitals without any referral letters.
- The dental services of health insurance are available for the most of restorative and prosthetic treatment and surgical care, such as **filling, endodontic treatment, crown & bridges, dentures and extraction.**

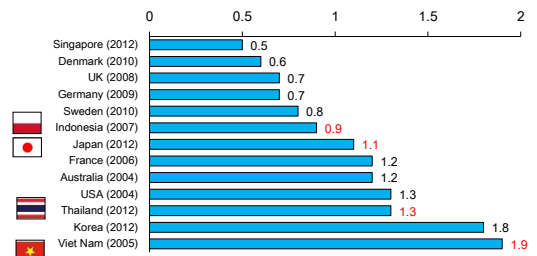


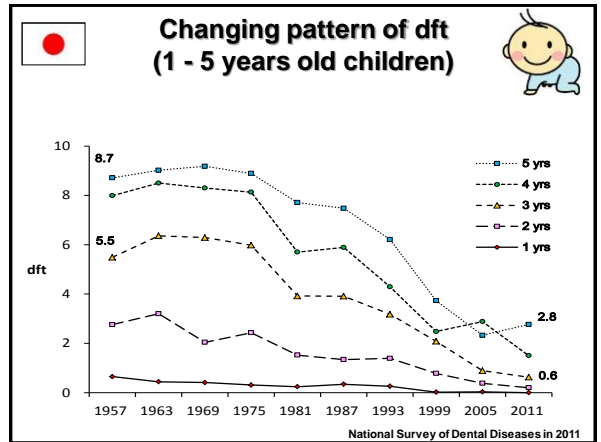
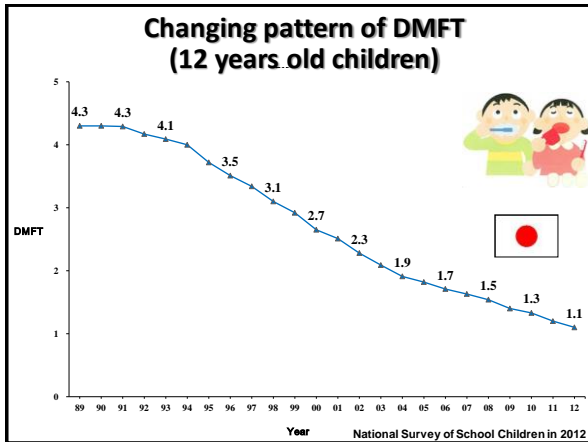
### National health insurance in Japan

- Higher cost items (gold crown & bridges, metal plate dentures and orthodontic treatment) are excluded.
- Preventive services are also excluded, because the health insurance system only covers treatment for existing diseases.
- Patients make **partial payments** (30%, or 10% for seniors), and the Social Insurance Fund reimburses the hospital or clinic for the remainder.



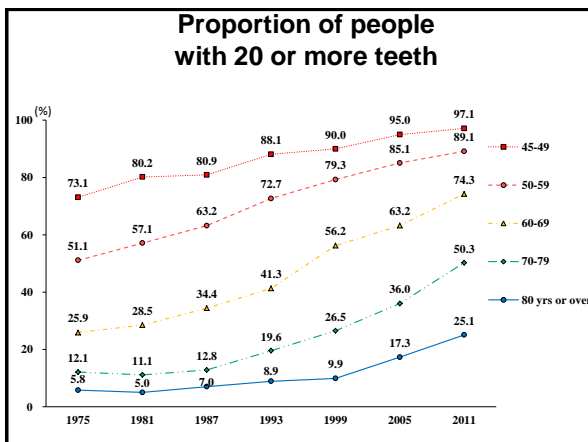
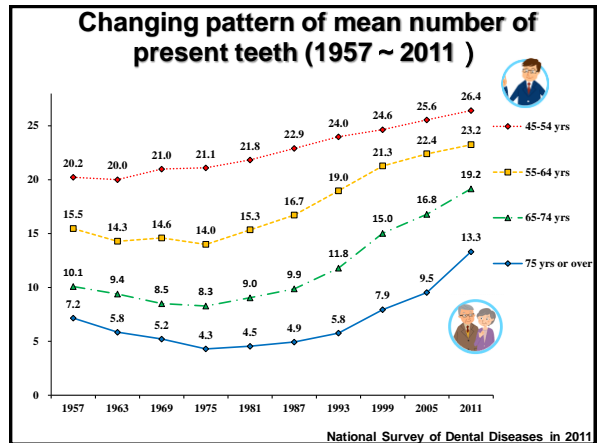
### DMFT (12 years old)





### 8020 Campaign

- This is a national campaign to encourage people to keep 20 or more of their own teeth until the age of 80, the approximate Japanese life expectancy.
- This campaign was launched in 1989 by the Ministry of Health, Labour and Welfare and the Japan Dental Association.



### Summary

- Dentists, dental hygienists, and dental technicians are major workforce in Japanese dentistry.
- National Health Insurance System covers medical/dental treatment and pharmacy services to all citizens.
- Public oral health services are provided to all generations for preventing diseases.
- National oral health survey is conducted regularly. The data is utilized as a reliable evidence for the government's policy making.

## *Report from students I*

### <Chulalongkorn University>

- Here comes the first day of both lecture and lab, we started with descriptive class about the basic information of 4 countries: Japan, Vietnam, Indonesia and Thailand. What we learned involved the knowledge of public health, medical law and dental health management in those countries.  
—Apisarid Chonlapat-Apiwich
- We have lecture in the morning about dental education, dental workforce and oral health status in Japan. I think I have accomplish one of the goals of the program because today I understand more about the oral health situation among 4 countries including Japan, Indonesia, Vietnam and Thailand.  
—Kornkamol Lunjanasatienchai
- I attended for the lecture on 'dental education, workforce, and oral health status in Japan'. This was the first lecture of this program. It was quite interesting because the lecture included the information of all 4 participated countries, not only that of Japan. This first lecture is the simple topic, but help me to see the overview of the oral health status in 4 countries; Thailand, Indonesia, Vietnam, and especially Japan.  
—Phan Bhongsatiern

### <Srinakharinwirot University>

- We studied about “Dental education, Dental work force, and Oral health station in Japan” with Dr. Sachiko Takehara. The subject not only shows dental work in Japan but also compare health care system between Thailand, Japan, Vietnam, and Indonesia as well.  
—Atith Jiranaphawiboon
- We had a lecture of “Dental Education, Dental Workforce, and Oral Health Status in Japan” together. The dental education system in each country is also different. In my opinion, it is very good to know I have learned their strength and weakness in their educational system which can help to improve dental educational system in Thailand. Besides, the Health Care system in Japan is very interesting for me. It can imply to the Japanese people’s quality of life. This is why the Japanese people have such a long life.  
—Chithathai Wongwitdecha
- I studied about Dental education dental workforce and oral health in Japan Compared with the other countries in the basic information, an updated information about dental situation from each university supervisor. I learnt that

each country have their own problems and have many different factors. So, the way that solve the problem was different. —Nithinan thirapongpaisal

- It is the new knowledge for me such as brachytherapy and Japanese dentists or government have the law that support about health of Japanese people which it is very decent for increasing quality of life. They show that the government and dentists give the attention to patient health so much because the health insurance in Japan covered a lot of treatments which I hope it happen in Thailand for improving Thais health. —Sirinthra Priyadumkol

- In Japan and Thailand, dentist choose to work in city area therefore in local area will has small amount of dentist that may not be enough. It will be a good thing if we can solve this problem to improve our population's oral health.

—Suthinee Kanokpoonsin

- I agree that there is no need of numerous workers for the work to be done if the workers are effective enough like there are not large proportions of public service dentists in Japan but the Japanese oral health trend is still improving.

—Thanaporn Ngamsakulwong

### <University of Indonesia>

- Dental school fees in Japan is much more expensive than the most expensive one in Indonesia. Indonesia and Japan have some problems, most dentists work in the city. Indonesia has lower DMFT than Japan, it is really surprising. Japan govemment take concern of the oral health, oral health treatments are included to the insurance. —Bernard Kurniawan

- I learned the a glimpse about dental health care and education among 4 countries. From the lecture, I learned that health insurance is so important in determing the life expectancy of the resident. I think that health insurance in Inddonesia has not work systematically good. The beuracracy in Indonesia is so complicated that sometimes it is so hard for the patient to access the health facilities using health insurance. This lesson should be evaluated in order to improved the quality of life in Indonesia. —Dela Medina

- We learned a lot from Japan, they had good health insurance, and also good health promotion program. Yet, to do the same thing in Indonesia we have a big problem, not only the financial problem but also the most important thing, it's the insufficient number of dentist. Then as a future dentist we have to do extra work to solve our nation problems in oral health. —Fadila Khairani

- Getting the lecture about the comparison of dental status in 4 countries gave me better understanding about other countries to promote better cross cultural

understanding which depend a lot in the cultural and socioeconomic background of the people. The different oral health situations and also dental education systems help to find the best solutions, which one of the Japan proposed is national health care insurance. I think it is very good project, and Indonesia is also currently working on it so hopefully, we can create better oral health status in the future; also by knowing each other dental education, we can bring better quality to create more great dentists, professionally and also develop in research.

—Fenny Kamadi

- For what I've learnt today I think Asia countries especially Indonesia, Thailand, and Vietnam still have a lot of home work to do in order to improve oral health care. Indonesia's health care system needs to be evaluated. This effort is important to reach equality and equity in health care. —Ranny Rahaningrum

#### <University of Medicine and Pharmacy at Ho Chi Minh City>

- I learned more about Japanese health status, and I also learned that Japanese life expectancy is very high. I think the reasons to explain that are because they have good and healthy daily habits and Japan has a perfect health care system. I hope the life expectancy of Vietnamese will be improved in the near future.

—Mai Tran Vi Na

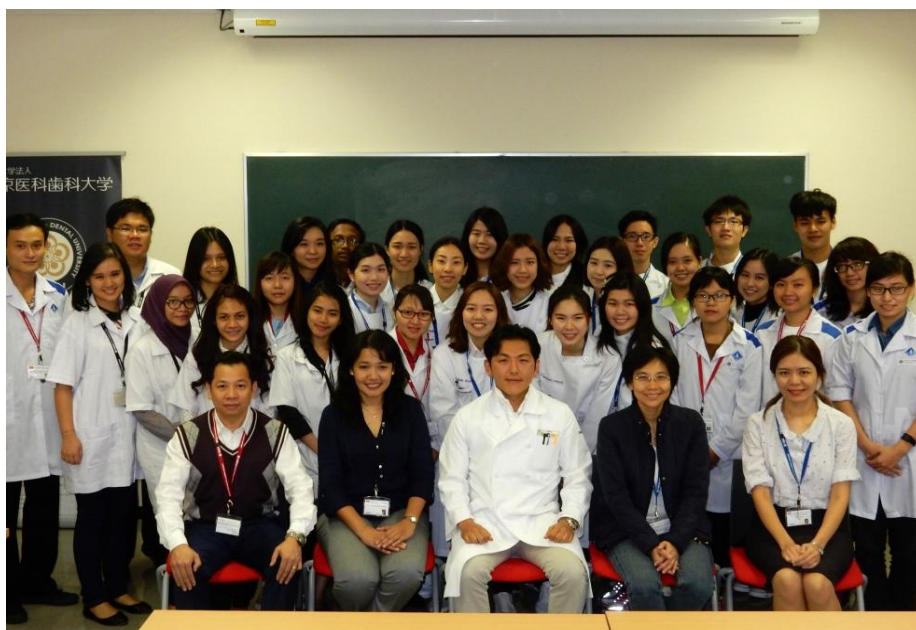
- Through Dr. Takehara lecture, I knew a lot of helpful knowledge about the difference among 4 countries. Viet Nam has the lowest GDP comparing to three countries left. Vietnamese health care. —Nguyen Thi Minh Khue
- I was impressed by Dr. Takehara's lecture that she broadened my view of dental education when comparing with other dental schools. Which interested me is "Yobo-san"- Japanese character meaning a monk that has the mission in preventing oral disease and it is likely the tooth fairy in Vietnam. It is quite amazing that Japan's population is less than Indonesia as it ranked third but has the most population in dentistry. Besides, Japan has a super-aging society with longest life expectancy thanks to the development of national health care system.

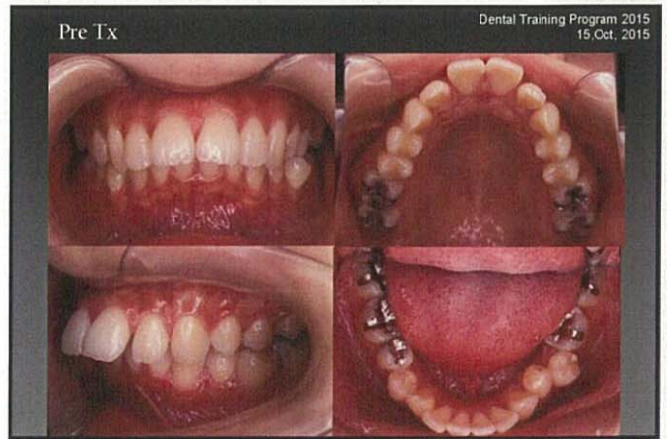
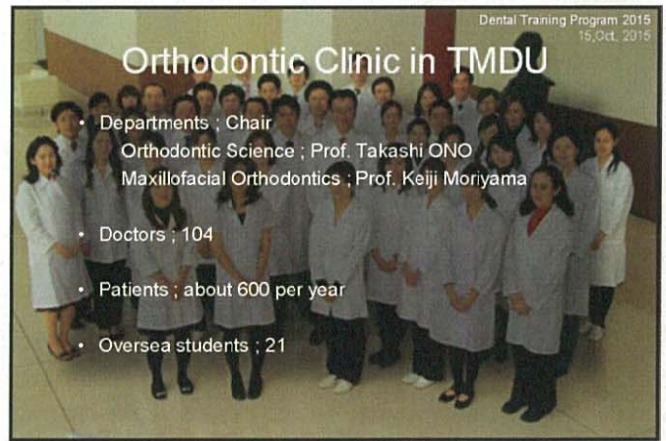
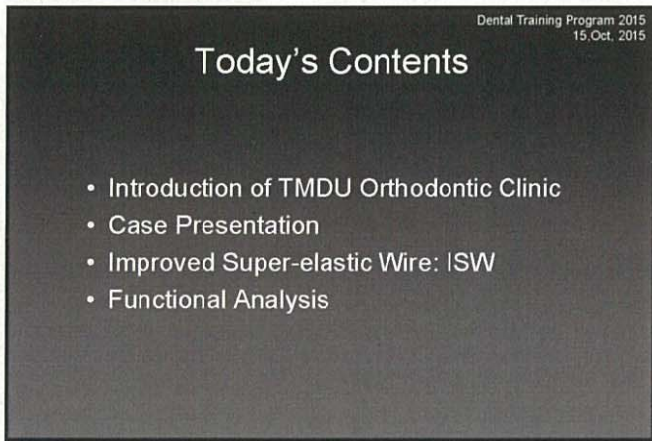
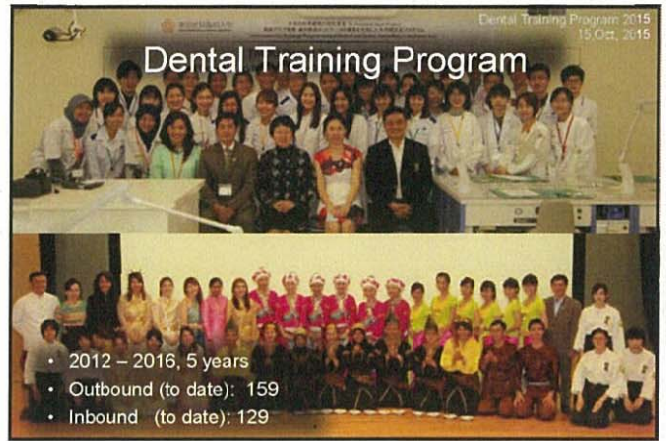
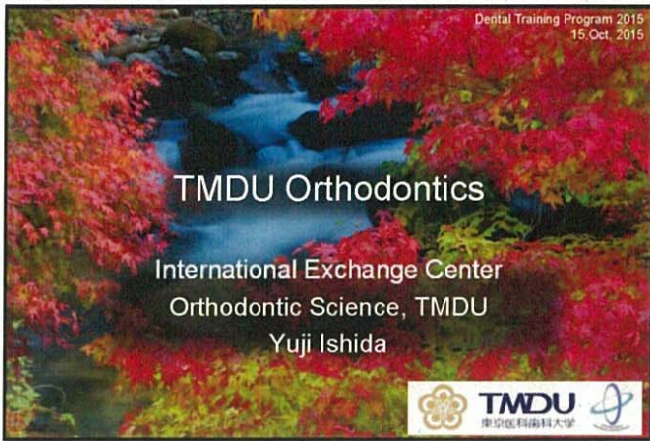
—Nguyen Thi Hoang Van

- The lecture of Dr. Takehara helped me have a panoramic view of oral health status and dental care resources in Japan. I also updated the basic information in Thailand, Indonesia. I hope I could contribute into the improvement of oral health and development of dental care resources of Vietnam so that our country's oral health problems could decrease. —Vo Dang Thao Nguyen

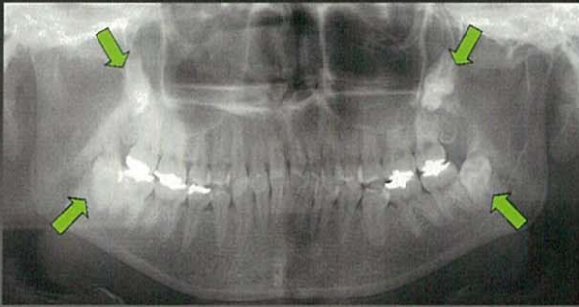
2. 10/15(木) 咬合機能矯正学分野 石田 雄之 特任助教

*“TMDU Orthodontics”*





Pre Tx



Problem list

- Large overjet: +13mm
- Deep overbite: +6mm
- Mn. plane: 18.5°
- Severe curve of Spee
- V-shaped, narrow dental arch

Diagnosis : Angle Class II Div.1

Treatment plan

- Extraction #38, #48
- Expansion and molar up-righting
- Correction of deep overbite and large overjet
- Improvement of facial profile

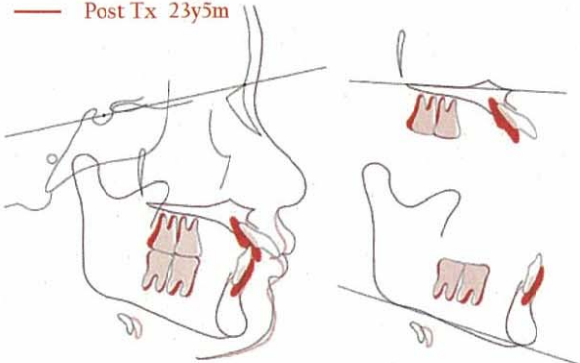
Post Tx After 36m



Post Tx



— Pre Tx 20y3m  
— Post Tx 23y5m



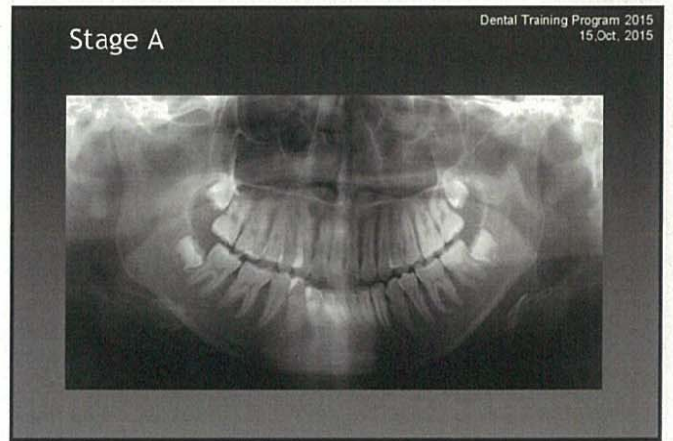
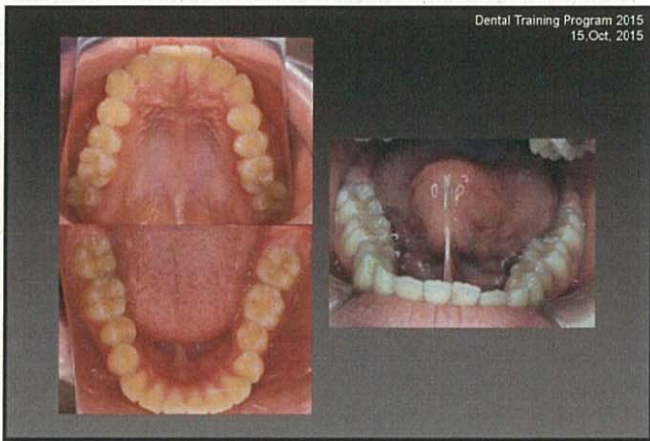
Pre-Tx

Post-Tx

LH wire

ISW  
(The improved Super-elastic Ni-Ti Alloy Wire)



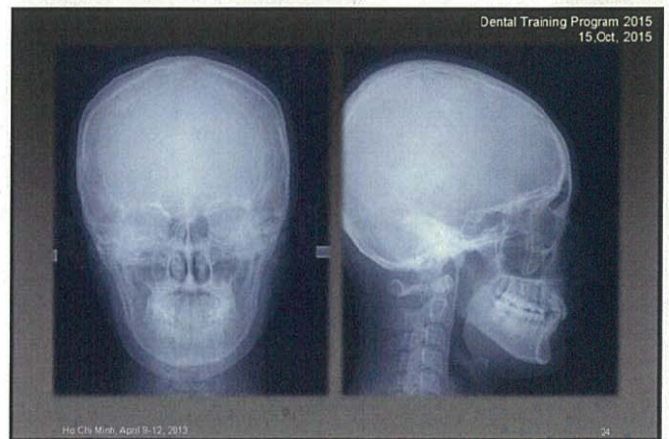
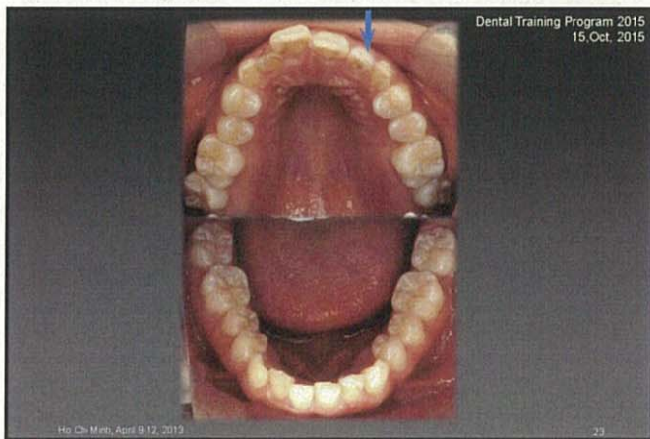
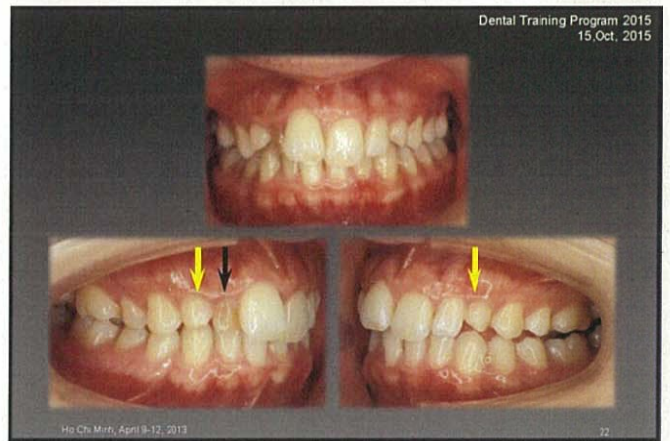
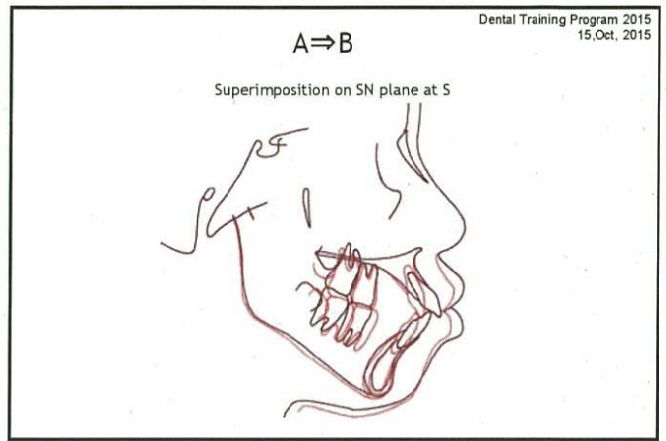
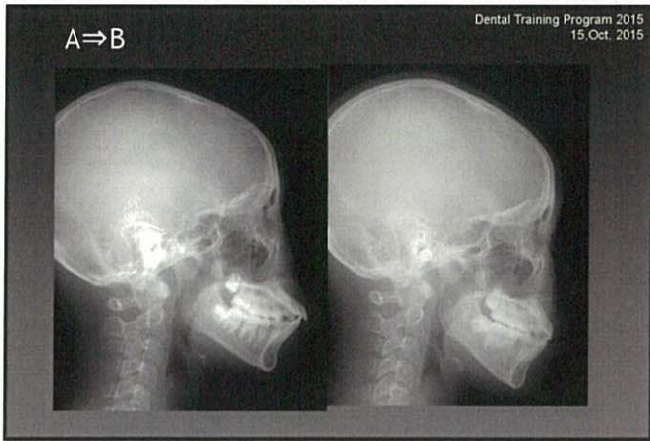


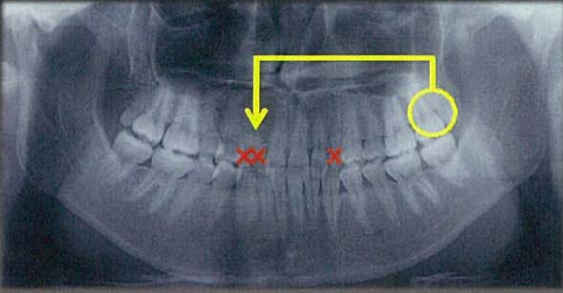
Dental Training Program 2015  
15 Oct. 2015

«Force System»

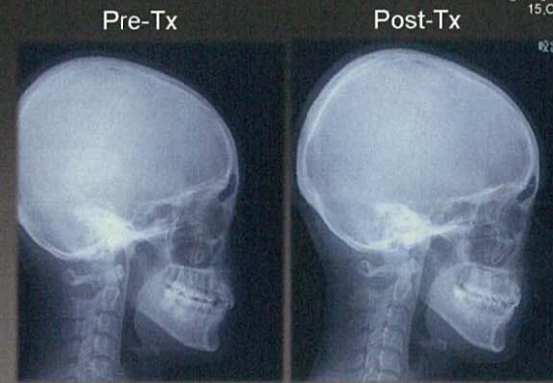
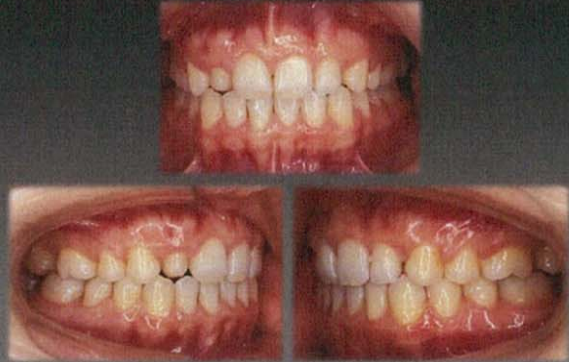
How to mesialize mandibular molars  
with severe curve of Spee  
⇒ uprighting & mesializing Md molars  
.022 slot with power arm



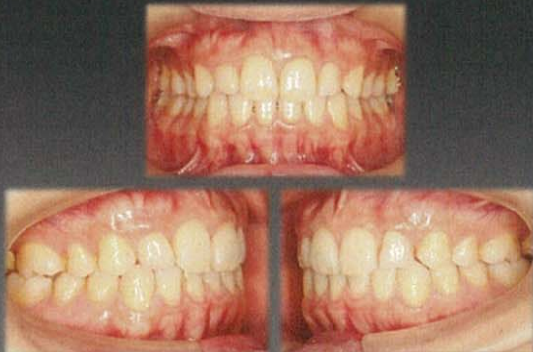




Tx plan - 52/53/63 extraction, 28→12 transplantation  
- uprighting Md molars

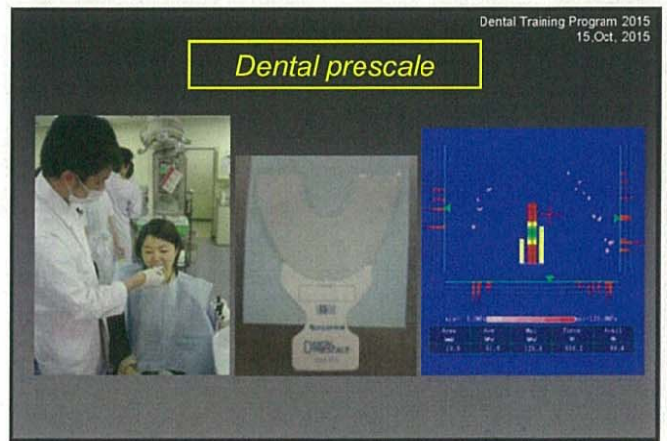
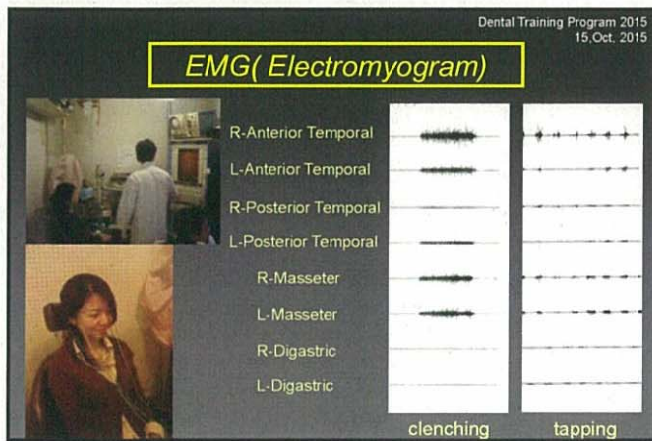
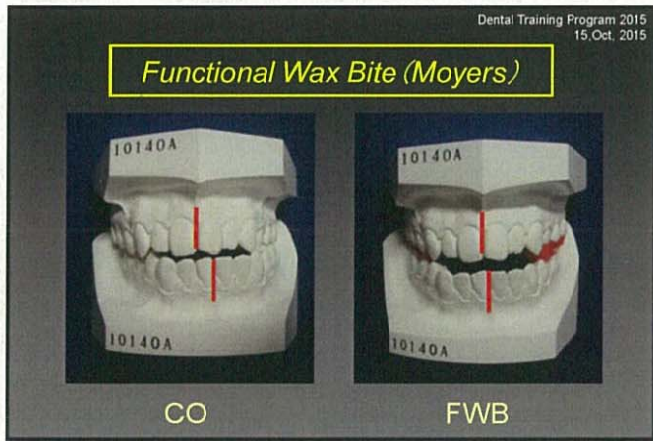
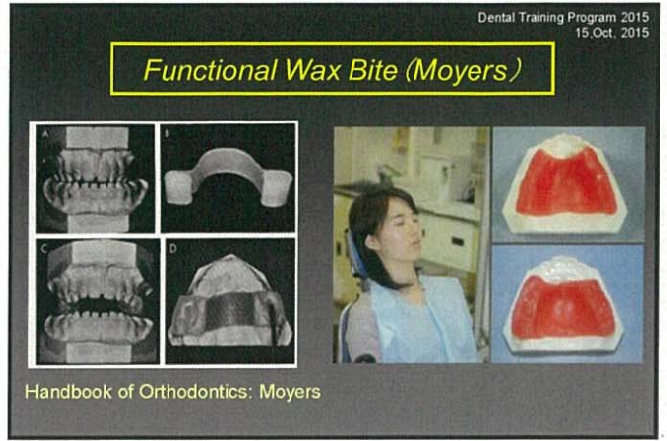
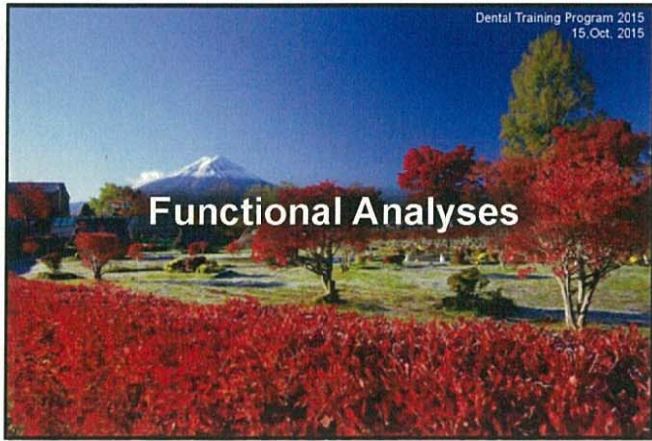


Post-retention 4Y6M

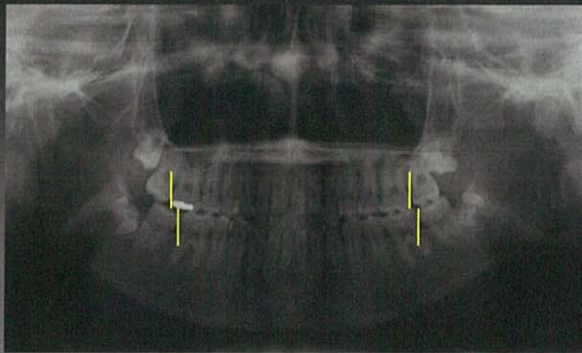
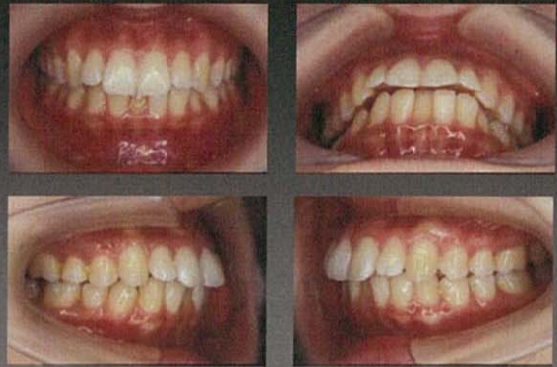


Post-retention 4Y6M



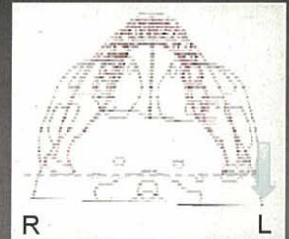


# CASE #4

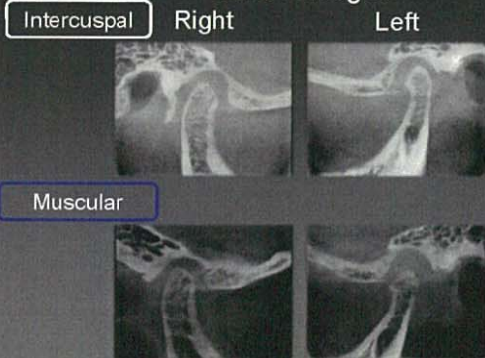


## TMD

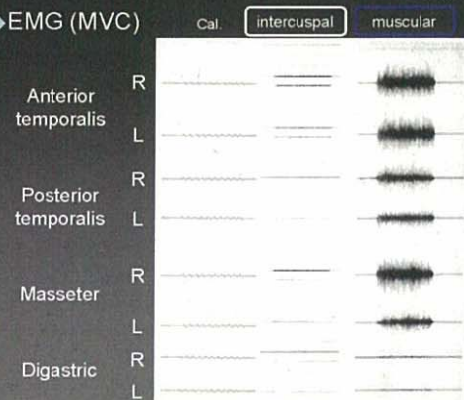
- Impaired jaw-opening (15 years old), thereafter clicking and pain (occasionally) on the **left**
- Amount of jaw-opening: 47mm
- Pain in the **left** masseter muscle
- Feeling of fullness and buzzing in the **left** ear
- Habitual **left**-sided chewing



## CBCT images



## ◆EMG (MVC)



**Problem lists & Diagnosis**

- Functional posterior and leftward shift of the mandible
- TMD and ear problems on the left
- Discrepancy
- Midline inconsistency
- Proclination of upper/lower incisors

**Treatment plan**

- Stabilization of muscular MD position using splint
- Multi-bracket appliance

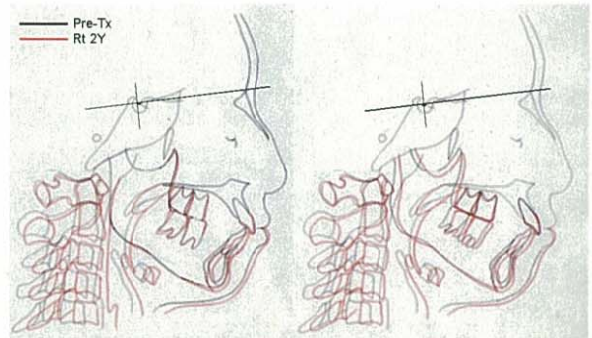
Post-Tx  
11M



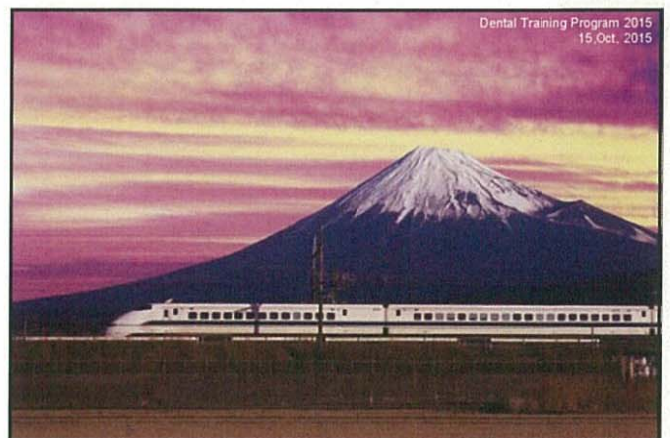
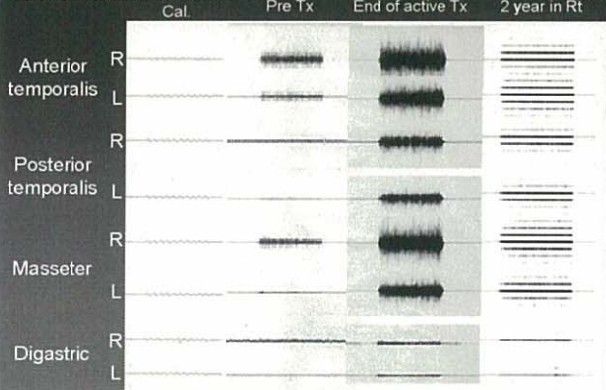
Post-Rt  
24M

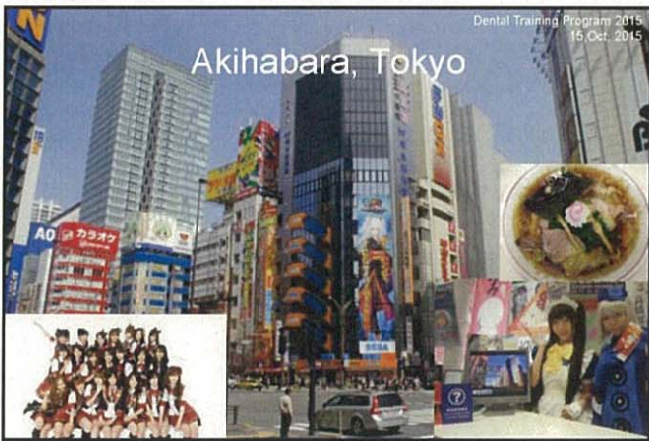
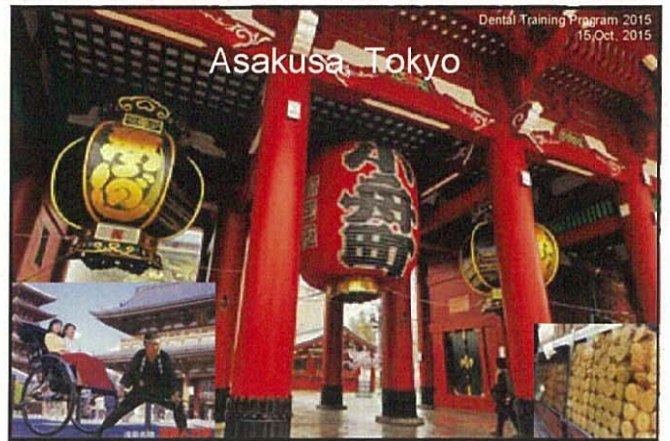
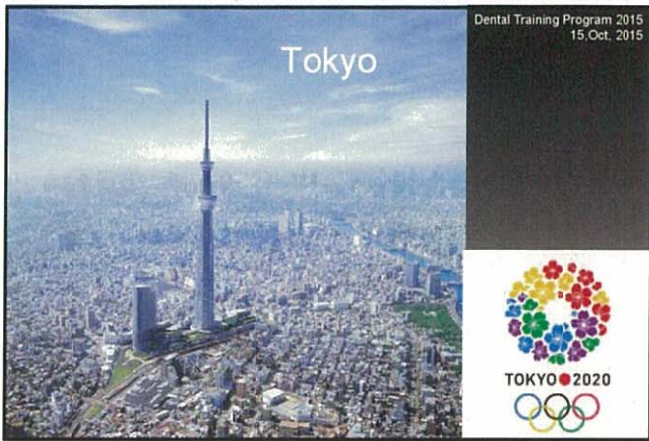


Superimposition on SN plane at S



**EMG examination**





## *Report from students II*

### <Chulalongkorn University>

- Introduction to TMDU Orthodontic clinic was presented, the department are divided into 2 parts: Orthodontic Science and Maxillofacial Orthodontics. A number of interesting cases were displayed. Problems found in patients are involved with overjet, overbite, curve of Spee, TMD, Discrepancy, etc. Treatment plan to solve those problems were indicated, for instance; extraction and expansion.  
—Apisarid Chonlapat-Apiwich
- Today I started with orthodontic lecture. There were cases that use various type of orthodontic appliance, such as using headgear to retract maxilla or force system to mesialize molar. The Improved Super-elastic Ni-Ti Alloy Wire (ISW) helps dentist to control the magnitude of force properly. Along with the orthodontic, muscle activity should be monitored.  
—Phan Bhongsatiern
- In the morning I had a lecture about TMDU Orthodontics. Dr. Ishida reviewed his orthodontic cases and treatment plan for each cases. The treatment included using Super-elastic Ni-Ti alloy wire, functional wax bite, Mandibular kinegiograph and Electromyogram. He said that nowadays, functional analysis is important because patients want to improve their muscle activity.  
—Ploypailin Manovilas

### <Srinakharinwirot University>

- Ishida sensei introduce us of TMDU Orthodontic clinic and show three cases of management and treatment plan of orthodontic patients; also the selection of equipment in each different treatment plan. At the end of the class he introduce us the place in Japan we should visit and many food we have to try, it's really relaxing.  
—Atith Jiranaphawiboon
- The lecture in the morning is very beneficial. I have learned more options for the treatment. It was interesting to learn from the actual case study.  
—Chithathai Wongwitdecha
- Treatment in each patient is different from many factor. So, you can't use only one treatment. You should think about the alternative treatment, too. But, you must follow the treatment objective. Dentist should not look only teeth but also quality of life. In nowadays, some dentist just only make a decision in treatment plan based on only knowledge and don't ask about the patient's opinion. I think it is not the way to success in treatment. Especially in the pediatric dentistry, painless dentistry



is the importance thing that dentist must pay attention. This is why you must pay attention in the other from teeth, too. —Nithinan Thirapongpaisal

- I lectured about TMDU orthodontic clinic with Dr. Yuji Ishida. He taught us by showing many cases and explained case by case about the diagnosis, treatment plan and follow up. —Sirinthra Priyadumkol
- The main content of this case presentation is to show different treatment procedure of each case. There are many way to do functional analysis such as functional wax bite (Moyers), mandibular kinigiograph , electromyogram and dental prescale. —Suthinee Kanokpoonsin

### <University of Indonesia>

- Orthodontics treatments in TMDU is same with the one given in universitas Indonesia. —Bernard Kurniawan
- We were attending mini lecture from Dr. Yuji Ishida about department of orthodontic science in TMDU. He talked about a few example of orthodontic cases in his department. The case presentation included the list of problems, diagnosis and treatment plan for the patient. The before-after photos showed the result of the treatment. The treatment process for the case usually done in several months to years. —Dela Medina
- We had a lecture about orthodontics. Dr. Ishida gave us some new information that I never heard before like doing auto transplantation tooth in orthodontic treatments. He also taught us some another analysis in orthodontics such as the functional, muscular and others. —Fadila Khairani
- Today's dental training program started at 9 a.m. with lecture from Dr. Ishida about orthodontics clinic in TMDU and some case reports explanation. Orthodontics department is divided into two majors : orthodontic science and maxillofacial orthodontics. Dr. Ishida then gave some explanations from case reports such as the problem lists in each cses, diagnosis, and treatment plans. TMDU has made many improvement in treating patients such as ISW or the improved super elastic Ni-Ti Alloy Wire, or also called as LH wire in which the spring force can be controlled. There was also J Hook Head, Functional Wax Bite (Moyers) by improving muscle activity which can be observed by mandibular kinigiograph, electromyogram, and dental prescale, also the developing auto transplantation. —Fenny Kamadi
- There is a orthodontics`s lecture with Dr. Ishida. He talk about introduction of ortodontics departement in TMDU and discuss about how to fix some cases in

orthodontics. The diagnosis of first case is Angel Class II div I with severe curve of spee and V shape and narrow dental. Second case is transplplantation of 12 with uprighting Molar third.

—Mohammad Mutawalli Makhbubi

- We learned from several different cases from TMDU Dental Hospital patients, and also the use of ISW(Improved Super-elastic Ni-Ti Alloy Wire) which is better known as LH wire. We also got the lecture not only about how to treat the orthodontic cases with wires, but also to check the functional wax bite, MKG (Mandibuker Kinegiograph), EMG (electromyogram), and also Dental prescale.

—Reina Lamtiur Hutaauruk

### <University of Medicine and Pharmacy at Ho Chi Minh City>

- In my opinion, I think orthodontics as well as pediatric are not easy to learn at all but I found them intersting and worth to study about. In each case, maybe there are so many treatment plans for applying but the doctors have to choose the best one according to the needs and financial problems of patients. So if we want to become the experts, we have to spend time and get more experiences. I wish I could come back here and learn more with Professors in near future.

—Hoang Manh Cuong

- To accomplish a perfect result in an Orthodontic case, it takes orthodontists a long time from months to years, moreover, high skill and knowledge are also required. I think Orthodontics is a very difficult and interesting department. I am looking forward to have high quality materials to help the Orthodontics in Viet nam.

—Mai Tran VI Na

- Orthodontics is really a difficult subject. Dr. Ishida presented to us some clinical cases that I've never seen in my university. They are so complicated that I feel treatment process would be also a challenging mission to any practitioner. I desired to have an opportunity to study more about Orthodontics in TMDU.

—Nguyen Thi Minh khue

- Orthodontic Science Department was not easy for me because the first I applied knowledge of theory into the cases. The lecturer is so helpful and enthusiastic to explain everything for me. It will be so useful when I am coming back Viet Nam.

—Nguyen Le Thu Thao

- I was so interested in Dr.Ishida's lecture as he has showed us several cases and his well treatment plan has given me such helpful clinical experiences in orthodontics.

—Nguyen Thi Hoang Van

- Dr. Ishida's lecture gave me a clinical view of orthodontics. It was so puzzling but

interesting as the treatment lasts many years. But watching the improvement of patient at the end of treatment made me want to study harder and harder so that I could understand and become an orthodontist someday.

—Vo Dang Thao Nguyen

3. 10/19(月) 高齢者歯科学分野 猪越 正直 助教

*“Introduction of Gerodontology and Oral Rehabilitation”*



# Introduction of Gerodontology and Oral Rehabilitation

Masanao Inokoshi, DDS. PhD. PhD.



## CV

2000-2006 Undergraduate (@TMDU)

2006-2007 Dental intern (@TMDU)

2007-2011 Graduate School (@ Complete Denture Prosthodontics, TMDU)

2010-2014 Doctoral School (@KU Leuven, Belgium)

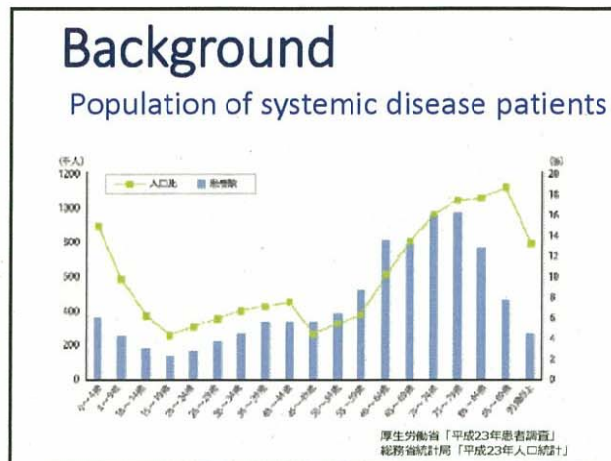
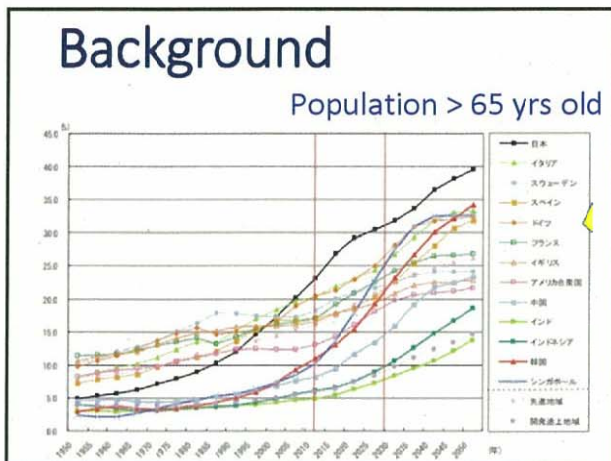


## CV

2015- Gerodontology and Oral Rehabilitation (@TMDU)

## Background





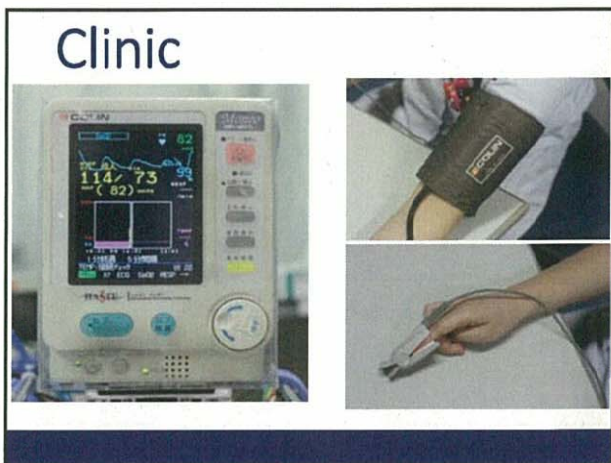
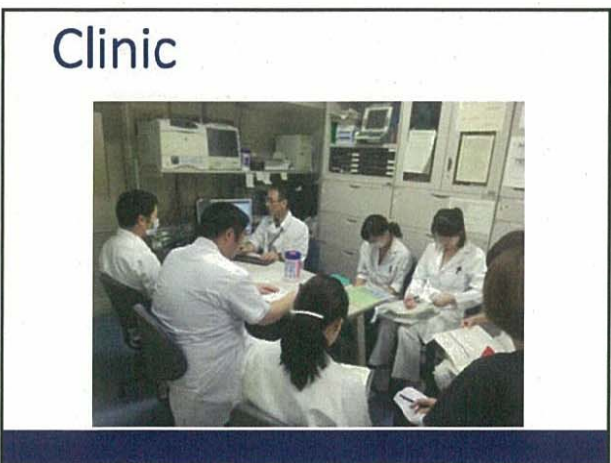
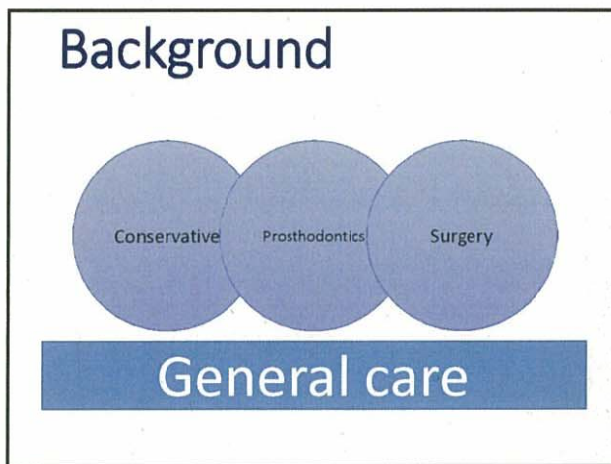
### Background

Needs for **special care dentistry**

**Definition**

**Special needs dentistry**, also known as **special care dentistry**, is a specialty of dentistry concerned with the oral health of people who have intellectual disability, or who are affected by other medical, physical, or psychiatric issues.

➤ A Case for Need: Proposal for a Specialty in Special Care Dentistry, 2003



## Research



## Research



- IOD
- Complete dentures
- CAD/CAM dentures
- Dental materials
- Special care dentistry
- Dysphagia rehabilitation

In my case...

## Research in 1<sup>st</sup> PhD



➤ Inokoshi M, Kanazawa M, Minakuchi S. *Dental Materials Journal* 2012; 31: 40-6.

Went abroad...

KU LEUVEN

KU Leuven  
**biomat**



### Research in 2<sup>nd</sup> PhD

#### Zirconia ceramics

### My research topics

- **Dental materials**  
zirconia, composite, cements
- **Root caries in elderly**  
in-vitro study, clinical study

### Dental zirconia

### Dental zirconia

- Strong 
- Biocompatible 
- Esthetic 

### Dental zirconia

- Three issues
  1. Low-temperature degradation
  2. Chipping
  3. Bonding to zirconia

### 1. Low-temperature degradation (LTD)

*The transformation of the meta-stable tetragonal to monoclinic ZrO<sub>2</sub>-phase at temperatures between 20-250°C.*

➤ Chevalier, Biomaterials, 2006.

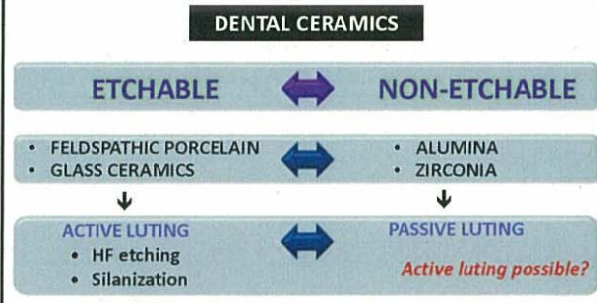


## 2. Zirconia-veneer compatibility

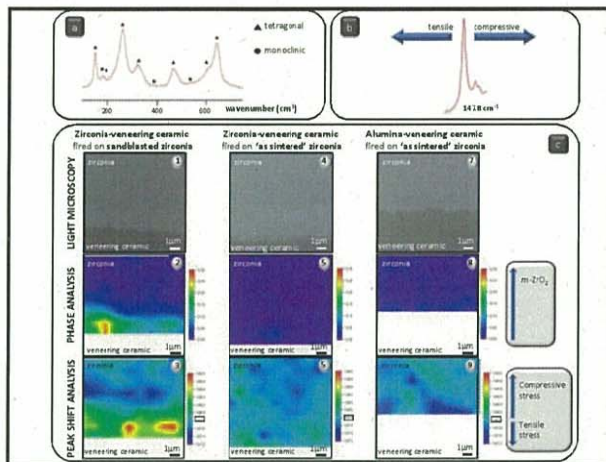
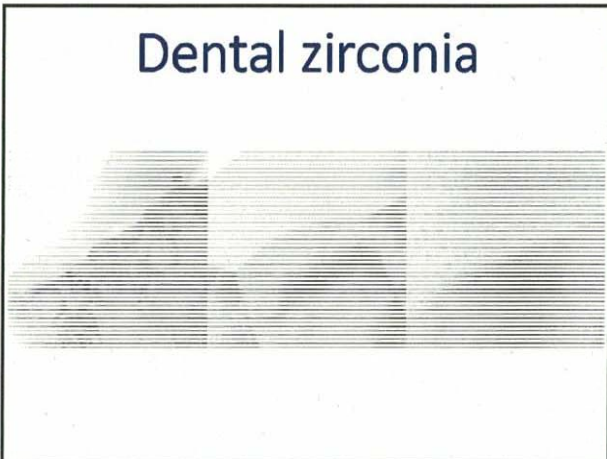
Clinical study	Chipping/de-bonding	
	PFM	Zirconia
Sailer <i>et al.</i> , 2009	19.3% (3 years)	33.3% (3 years)
Rinke <i>et al.</i> , 2012	4.2% (3 years)	7.7% (3 years)



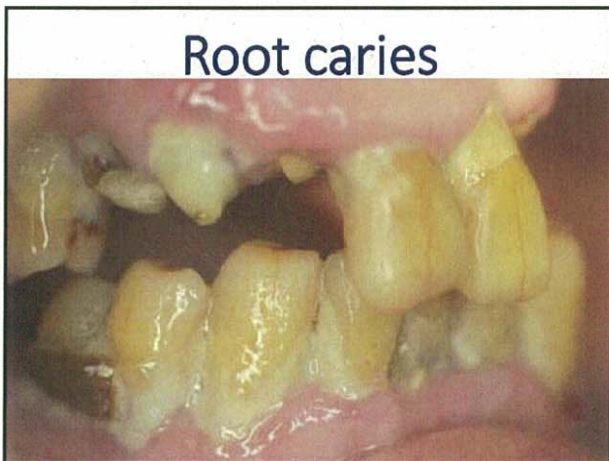
## 3. Bonding effectiveness to zirconia



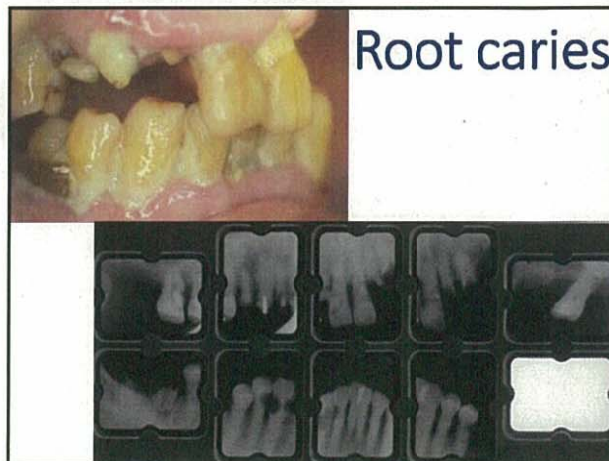
## Dental zirconia



## Root caries



## Root caries



## Root caries

- Issues to be solved

1. How to prevent?
2. How to treat?



## Important things for PhD

## What you should learn

- How to conduct research  
search, read, plan, experiment,  
analysis
- How to present your data  
present, write

## Publish a lot of papers!

TMDU

Thank you for your  
attention!

[m.inokoshi.gerd@tmd.ac.jp](mailto:m.inokoshi.gerd@tmd.ac.jp)

## *Report from students III*

### <Chulalongkorn University>

- We had mini-lecture in the morning in the topic about Gerodontology and oral rehabilitation. In Japan one fourth of the population is the elderly people and people over 65 year-old almost have systemic disease so they need special care dentistry. Dr. Inokoshi also shared his research topic while he studied PhD in TMDU and in Belgium. The topics are about dental material especially zirconia and another topic is about root caries in elderly.

—Kornkamol Lunjanasatienchai

- The lecture explained what the department's work is and which type of work are included. The topic was quite new to me because the department does not exist in my country. It is very interesting as the trend of human population shift to the older ages, a new focus of treatment needs to follow. Moreover the department is a combination of many types of work including conservative treatment such as scaling, prosthodontic treatment and also surgical treatment. The main objective of this department is “the special care treatment” for patients with disability, who suffer from systemic disease and other special conditions. This is another field of dentistry that I assumed is a field of future treatment.

—Noramon Chakthranont

- The lecture was about Introduction of Gerodontology and Oral Rehabilitation. It was the department that gives dental treatment to patients with special needs, mostly elderly people. Elderly people might have some disabilities, such as impaired communication skill or medical compromised. Every dental unit of this department has vital signs monitored to prevent any complication. There were several research topics that were associated with the department, for example; implant retained over denture, complete dentures, dysphagia rehabilitation, or special care dentistry (relationship between systemic diseases and oral condition). The professor that lectured me today got 2 PhD. Degrees, so he also gave some important notes on how to study for PhD.

—Phan Bhongsatiern

- Dr. Inokoshi lectured about Introduction of Gerodontology and Oral rehabilitation. Gerodontology has become very important knowledge because almost 25% of Japan population aged more than 65 years old. These population often have systemic disease so they need for special care dentistry. Gerodontologist is mixed with conservative dentistry, prosthodontics dentistry and Oral surgery. However,

gerodontologists always considered about systemic disease in general care.

—Ploypailin Manovilas

### <Srinakharinwirot University>

- Today in the morning we had a lecture about introduction of gerodontology and oral rehabilitation with Inokoshi sensei. He told us his history of student life in Japan and Belgium. Many work and research had been done and took him to this point. He thought us what are important things for PhD, how to conduct research, and how to present a data. —Atith Jiranaphawiboon

- The lecture class in the morning is very interesting and useful because now in Thailand we are in the age society. A lot of elderly people have been increasing every year. Moreover, the system in this department is very safety and patient is the first priority for them. They have a morning discussion in every morning which I think it is very important and worthy thing to do.

—Chithathai Wongwitdecha

- Nowadays, Japan become to the elderly society. The same elderly person have a disability in medical, physical, and psychiatric need to be treated by special care dentistry. The research in this department is about IOD, Complete denture, CAD/CAM, dental material, special care dentistry, dysphagia rehabilitation. The things that you should know when you make a research is how to conduct research and how to present data. —Nithinan Thirapongpaisal

- I have an opportunity to learn about gerodontology and oral rehabilitation with Dr. Masanao Inokoshi. In Japan, the population's age is estimate more than sixty-five years old, and for the Japanese whose age are more than sixty years old mostly have systemic disease, so they need special care in dental treatment.

—Sirinthra Priyadumkol

- I attended a lecture about Gerodontology and oral health rehabilitation which was described by Dr. Masanao Inokoshi. In Japan, there are many elderly people who older than 60 years old. Most of them need for special care dentistry which concern in the oral health of people who have intellectual disability, or who are affected by other medical, physical, psychological. In special clinic, there are case operations in everyday and they have meeting to check patient condition in every morning. There are many several research groups for example IOD, complete denture, CAD/CAM denture, dental material special care dentistry, dysphagia rehabilitation.

—Suthinee Kanokpoonsin

- As our sensei has double PhD, the interesting points were about the important

things for PhD. What we should do to conduct the research were searching, reading, planning experiment, analysis. —Thanaporn Ngamsakulwong

### <University of Indonesia>

- I was impressed to Dr. Inokoshi's lecture. In my opinion he is a real expert. He published 9 of his paper in Journal of Dental Research. —Bernard Kurniawan
- We were given a mini lecture about introduction of gerodontology and oral rehabilitation by Dr. Masanao Inokoshi, DDS., Ph.D., Ph.D. He got his degree from Tokyo Medical and Dental University and KU Leuven University. According to the information provided from Dr. Inokoshi, Japan has a large population aged more than 65 years old. This elderly people usually have systemic disease and it makes TMDU Hospital developed special needs/special care dentistry department. —Dela Medina
- We had a lecture about gerodontology and oral rehabilitation bt Dr. Masanao Inokoshi, DDS. PhD. PhD. He talked about the importances of this department, and also the field research that he is focusing on. He also gave us the information about the important things we have to prepare for preparing ourself to be a PhD student, such as how to develop idea and do the research and write a journal. —Fadila Khairani
- I thought that Japan as one of the leading country in health care really needs special care like geriodontology, psychosomatic, and maxillofacial surgery. Geriodontology provides cares for elderly people, which is 25% of Japan population with monitoring their systemic health as well as giving dental treatment. —Fenny Kamadi
- There was lecture from Dr. Masanao Inokoshi DDS, PhD, PhD that talk about Introduction of gerontology and Oral rehabilitation. He was graduated from TMDU and KU Lueven Belgium. Japan has a lot of eldery people. Therefore, Japan need special treatment or care dentistry that speciality dentistry concerned with oral health who affect dementia, disability, and who affect medically. Dr Inokoshi conducted in many research. There was main of research topics in gerontology that were dental material such as zirconia and root caries such as in vitro and clinical study. The aim of the research in root caries is how to prevent and how to treat root caries. —Mohammad Mutawalli Makhbubi
- The lecture today was about Introduction of Gerontology and Oral Rehabilitation by Dr. Masanao Inokoshi, DDS., Ph.D., Ph.D. He got his degree from TMDU and

University Leuven. He explained that Japan has so many elderly people above 65 years old and they usually have systemic diseases which is why the TMDU Hospital has developed special needs/special care dentistry. Special care dentistry is focusing on treating people with intellectual, mental, physiological, and physical disability. Gerontology Department in TMDU Hospital provide general care to treat oral and systemic diseases. General care consists of conservative treatment, prosthodontics treatment, and also surgery. The staffs of Gerontology Department has six operations in one day. There would be a meeting and a monitoring system to prevent incident during treatment. —Ranny Rahaningrum

- We got an introduction of gerodontology and oral rehabilitation from Dt. Masanao Inokoshi. At first, he explained to us that there are 25% of older people in Japan (above 65 y.o.) and most of them got systemic disease and that's why they need special care dentistry. Special care dentistry concerned about the oral health for people with intellectual, physical, medical, and psychiatric disability. Special care dentistry always considered general care and included conservative, prosthodontics, and surgery. —Reina Lamtiur Hutaaruk
- I got the chance the lecture from a great doctor named Inokoshi. He came from Japan and finished his second doctoral study in Belgium. He is very inspiring since he has published a lot of journal and paperworks. Today, he shared about his life experience and what he learned in gerontology department. —Vynlia

### <University of Medicine and Pharmacy at Ho Chi Minh City>

- My second week as my second Monday was started with Dr. INOKOSHI Masanao and his lecture about Gerodontology and Oral Rehabilitation. Through that period of 30 minutes, I has grasped more about his department. —Ho ThiThuy Tien
- I attended the lecture about Gerodontology and Oral Rehabilitation teaching by Dr. Masanao Inokoshi. He gave us an overview of these fields. They are established for researching and creating materials for the elderly and also the disabled people. Then, he gave us some useful advice about Doctoral program. We learned how to conduct a research and present our data through his experiences in doing research I though these were valuable for us in the future. —Hoang Manh Cuong
- Through Dr. Inokoshi's lecture I have known that a researcher has to publish many science articles and a student who wants to become a researcher should read many papers. —Mai Tran Vi Na

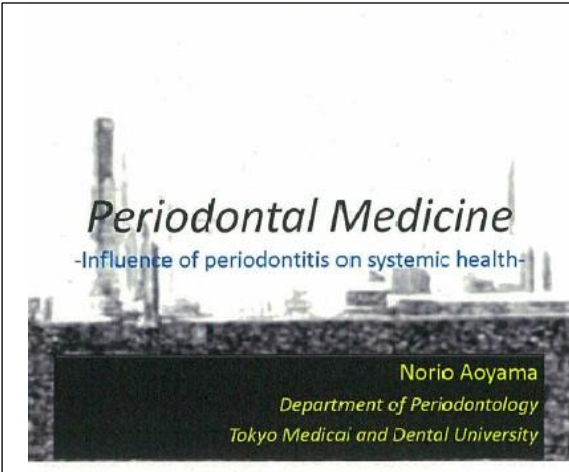
- Gerodontology is quite brand new in Viet Nam. Many clinicians don't know about this special field of dentistry. While proportion of the elderly in Viet Nam is increasing, I think Gerodontology is very essential to take care of old people.  
—Nguyen Hoang Thy Van
- I learned a quite new dental specialty Gerodontology. In Viet Nam, it was added into dental education program just a few years ago. Therefore, there are many doctors who don't know about Gerodontology and Oral Rehabilitation. I think my university and also my country should develop this special dental field.  
—Nguyen Thi Minh Khue
- I started my exchange program journey and a new week has begun with Dr. Masanao Inokoshi's lecture which presented the introduction of Gerodontology and Oral Rehabilitation. He mentioned that the most common dental material was Zirconia of which benefits were strength, biocompatibility and aesthetics. However, it was non etchable ceramic, which had low temperature degradation and easily chipped.  
—Nguyen Thi Hoang Van
- I got a chance to understand about gerodontology. I did not have the opportunity to visit this department so I felt lucky to get to understand about it. I thought that our university should develop this department to prepare for the aging population in the near future. It was also thoughtful of Dr. Inokoshi to give us some advice on studying post-graduate. I admired as how he devoted to science and hoped to become a researcher like him.  
—Vo Dang Thao Nguyen

4. 10/21(水) 歯周病学分野 青山 典生 助教

*“Periodontal Medicine –Influence of periodontitis on systemic health”*

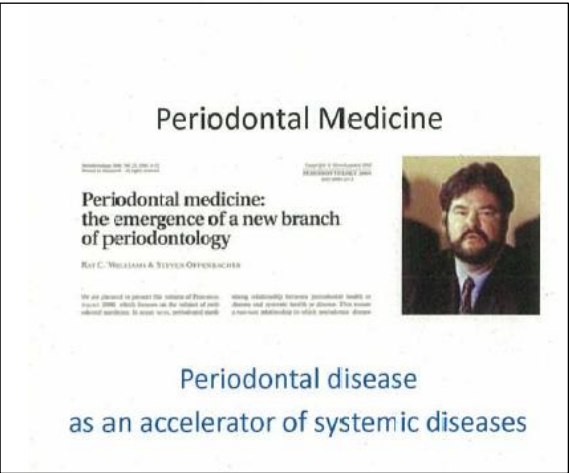






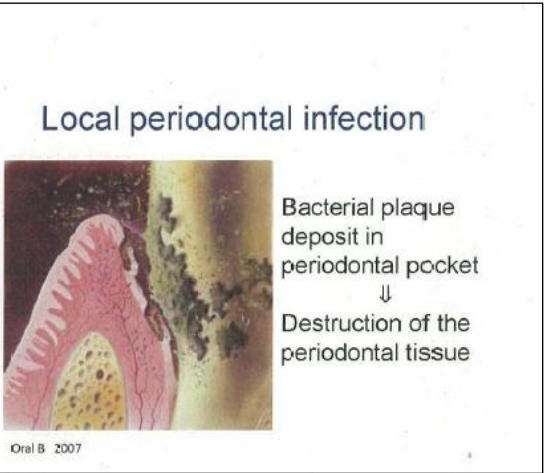
### Major projects of our department

- Periodontopathic bacteria
- Immunological factors
- Periodontal regeneration
- Clinical application of LASER
- Peri-implantitis
- **Periodontal medicine**



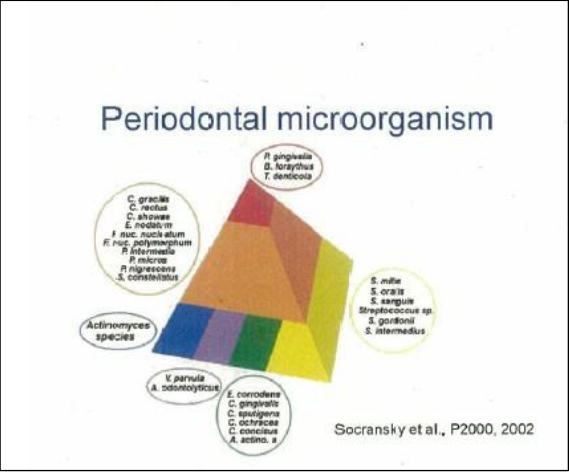
### Periodontal Medicine

Periodontal disease as an accelerator of systemic diseases

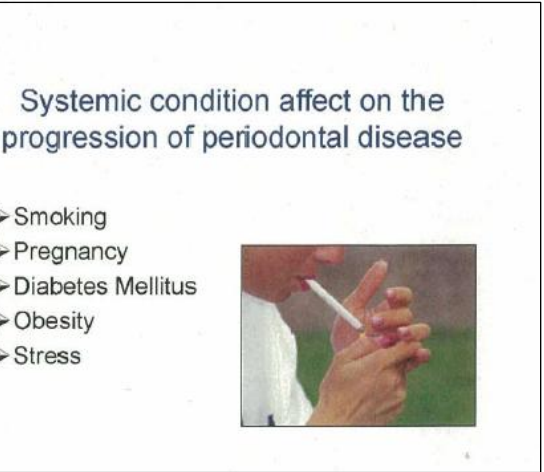
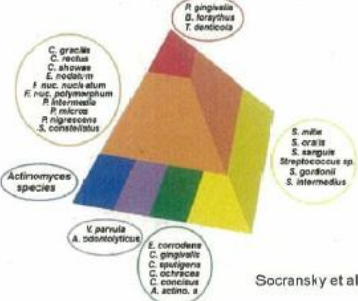


### Local periodontal infection

Bacterial plaque deposit in periodontal pocket  
↓  
Destruction of the periodontal tissue



### Periodontal microorganism



### Systemic condition affect on the progression of periodontal disease

- Smoking
- Pregnancy
- Diabetes Mellitus
- Obesity
- Stress



## Association between periodontitis and systemic diseases

- Recent studies suggest that periodontal pathogens are associated with several kinds of systemic diseases.

(Spahr et al., Arch Intern Med. 2006)  
(Jansson et al., J Clin Periodontol. 2002)



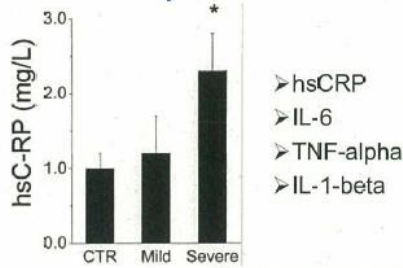
## Periodontal bacteria exist in vascular lesions

Type of bacteria	Oral sample (n=32)	Atherosclerotic wall	Mural thrombus
All bacteria studied	28 (88)	24/28 (86)	14/16 (88)
<i>Porphyromonas gingivalis</i>	26 (81)	22/26 (85)	12/15 (80)
<i>Deformans dentriticus</i>	19 (59)	12/19 (63)	3/10 (30)
<i>Porphyromonas intermedia</i>	13 (41)	4/13 (31)	0/7 (0)
<i>Campylobacter rectus</i>	11 (34)	5/11 (45)	1/7 (14)
<i>Tannerella forsythensis</i>	23 (72)	5/23 (22)	0/13 (0)
<i>Porphyromonas nigrescens</i>	6 (19)	1/6 (17)	0/3 (0)
<i>Actinobacillus actinomycetoides</i>	1 (3)	0/1 (0)	0

Values are number (%) of specimens. Bacteria are detected by polymerase chain reaction assay.

Kurihara et al., Eur J Vasc Endovasc Surg. 2004

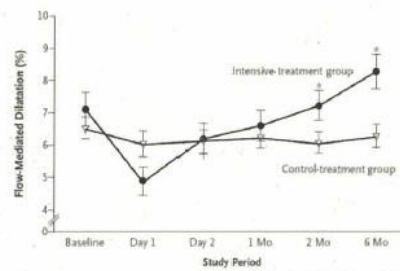
## Periodontal disease increases markers of systemic inflammation



Amar et al., Arterioscler Thromb Vasc Biol. 2003

Copyright © American Heart Association

## Periodontal treatment improved endothelial function



Tonetti et al., N Engl J Med 2007

## Association between periodontitis and cardiovascular diseases

- Chronic periodontitis is associated with incidence of CHD, independent of established cardiovascular risk factors.

(Thomas Dietrich et al., Circulation. 2008)

## Relationship between periodontitis and cardiovascular diseases

These results indicate that periodontopathic bacteria play roles in the development of cardiovascular diseases.

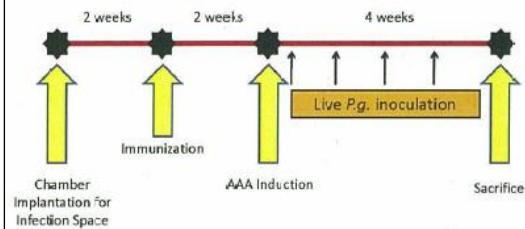
- However, the influence of these bacteria has not yet been proven.

## Objective

The objective of this study is to clarify if periodontal bacteria promoted cardiovascular diseases.

## Material and Methods

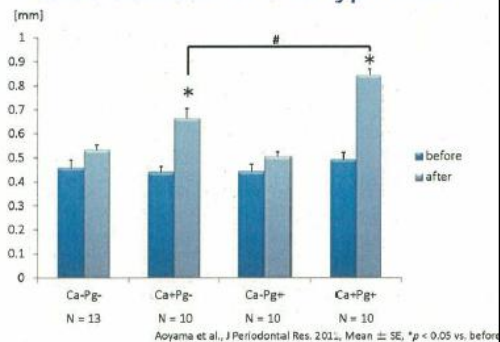
### Time schedule of an animal study



*P.g.* (*Porphyromonas gingivalis*) is one of the major periodontal pathogens.

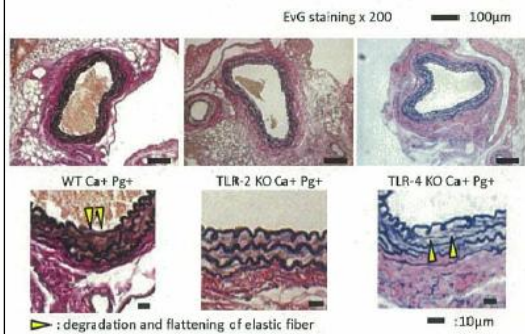
## Results

### Aortic diameter in wild-type mice



## Results

### Histopathological analysis



## Summary of these animal studies

- Specific periodontal bacteria promoted some kinds of cardiovascular diseases such as aortic aneurysm and neointimal formation.
- *Porphyromonas gingivalis* plays a fundamental role in the progression of vascular diseases.

## Purpose

We started a clinical study to assess the relationship between periodontal bacterial burden and cardiovascular diseases.

Material and Methods

### Subjects

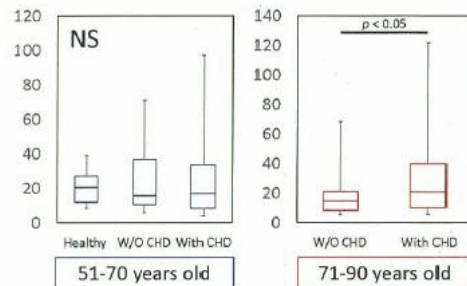
Inpatients with cardiovascular diseases (CVDs) in TMDU Medical Hospital and healthy control subjects were recruited for this study.

	51-70 years old	71-90 years old
Healthy (Control)	n=22	-
CVD patients without coronary heart disease	n=278	n=146
Coronary heart disease patients	n=133	n=142

Results

### Anti-*P. intermedia* antibody level

{ × 10,000[Units/mL]}



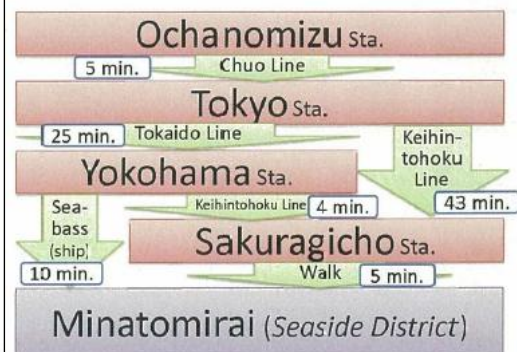
### Summary of this clinical study

- Coronary heart disease patients have lost more teeth than patients without coronary heart disease.
- Serum anti-*Prevotella intermedia* antibody level of elderly patients with coronary heart disease increased.

### Conclusion

Periodontitis is associated with several **systemic diseases**.

Periodontal infection may promote **vascular diseases**.



## *Report from students IV*

### <Chulalongkorn University>

- Presented by Prof. Norio Aoyama, we began our class with the lecture “Periodontal Medicine”. It’s inevitable to say that periodontal disease is an accelerator of systemic diseases, for instance; Diabetes mellitus, preterm birth, cardiovascular disease, osteoporosis and aspiration pneumonia. In contrast, periodontal treatment improved endothelial function, but there’s still no clarification that the periodontal bacteria could promote cardiovascular diseases. Researchers found that coronary heart disease patients have lost more teeth more than the healthy and periodontal infection could lead to vascular diseases.

—Apisarid Chonlapat-Apiwich

- I have a chance to have more knowledge about this unique department which they don’t have in my university.
- The day started with morning lecture again on “Periodontal Medication”. The concept of this lecture is to treat the periodontal disease in aiming for an improvement in systemic diseases that has two way relationships with periodontitis such as cardiovascular diseases, diabetes mellitus. This is cooperation between medical and dental treatment at the same time. Both diseases are not going to cease if either one is still ongoing.

—Noramon Chakthranont

- I got the lecture about Periodontal Medicine this morning. Systemic disease and periodontitis have effect on each other in 2 directions. Recent studies suggest that periodontal microorganisms are associated with many systemic diseases, such as diabetes mellitus, cardiovascular disease, osteoporosis, or preterm birth. Periodontal disease increases systemic inflammatory markers. The study found that specific periodontal bacteria promoted cardiovascular diseases and *Porphyromonas gingivalis* plays role in the progression of vascular disease. Therefore, periodontitis is associated with several systemic diseases and periodontal infection can promote vascular disease.

—Phan Bhongsatiern

- Today lecture is about periodontal medicine by Prof. Norio Aoyama. He told us that about the association between systemic diseases and periodontitis. While periodontal disease is an accelerator of systemic diseases, systemic disease also affect the progression of periodontal disease. Moreover, periodontopathic bacteria

play roles in the development of cardiovascular diseases and also increase the risk.

—Ploypailin Manovilas

### <Srinakharinwirot University>

- Class was tough by Dr. Norio Aoyama about “Periodontal Medicine”. It is about the relationship between periodontitis and systemic disease, which can be effect by smoking, pregnancy, DM, Obesity, and stress. He also presents his research presentation about the connection of periodontal disease associated with cardiovascular disease. During the presentation, Aoyama sensei introduce us many place to visit in japan, especially Minatomirai, Yokohama.

—Atith Jiranaphawiboon

- The lecture in the morning was a useful thing. It updated my knowledge that periodontal disease may promote vascular system. Norio Aoyama presentation was fantastic. In addition to giving us only the knowledge, he also gave us some information of beautiful place to go travel in Japan. He showed some beautiful picture of those places.

—Chithathai Wongwitdecha

- The morning lecture topic is “Influence of periodontitis on systemic health” from a department of periodontal medicine. The infection of bacterial infection in periodontal pocket is the cause of damaging of periodontal tissue. Not only bacteria but also the systemic factors that affect to the periodontal disease such as smoking, diabetes mellitus, and pregnancy. There are a study in “the relationship between periodontitis and cardiovascular disease. The results of this study indicate that some type of periodontal bacteria such as Porphyromonas gingivalis promote the cardiovascular diseases.

—Nithinan Thirapongpaisal

- In my opinion, the Japanese people is so lucky because they have many dentists who try to improve their knowledge by doing many researches and it might be small point in my heart to try to do researches for Thai people too in the future. Not only about research that decent in Japan, but also in the management of many departments to control and improve the knowledge and benefit to patient to get well care is important and well in management too.

—Sirinthra Priyadumkol

- I have learned about periodontal medicine in topic of influence of periodontitis in systemic health which taught by Dr. Norio Aoyana. He said that periodontal disease as an accelerator of systemic disease. There are many systemic disease affect in the progression of periodontal disease such as smoking, pregnancy, diabetes mellitus, obesity and stress. Periodontal disease increase markers of systemic inflammation

and some specific periodontal bacteria promoted some kind of cardiovascular disease such as aortic aneurysm and neointimal formation. So in conclusion, periodontitis is associated with several systemic disease and periodontal infection will promote vascular disease. Therefore periodontal treatment will improve vascular function.

—Suthinee Kanokpoonsin

- I learnt in the field of periodontal medicine which was the new branch of periodontology. They study about local periodontal infection, periodontal organism, system condition affect on the progression of periodontal disease, association between periodontitis and systemic disease, periodontal bacteria exist in vascular lesions, periodontal disease increase markers of systemic inflammation.

—Thanaporn Ngamsakulwong

### <University of Indonesia>

- I was given lecture about periodontal medicine by Dr. Norio Aoyama. The main research topics in his department are periodontopathic bacteria, immunologic factors, periodontal regeneration, clinical application of LASER, peri-implantitis, and periodontal medicine. Recently, periodontal medicine become a new important branch of periodontology as periodontal disease induce varies of systemic diseases. Bacteria plays a huge role in including systemic disease. When bacteria were deposited in the pocket, the periodontal tissue destroyed.

—Bernard Kurniawan

- We attended the mini lecture. It was about periodontal medicine by Dr. Aoyama. At the beginning of the presentation, he explained about his hometown, Yokohama. He told us about the beauty of Yokohama and told us to go there. After that he gave a lecture about periodontal medicine and focused on the systemic condition that can affect progression of periodontal disease. Periodontitis can also enworse the systemic disease. He showed us a few research result that indicating association between periodontopathic bacteria and cardiovascular diseases. However the influence of these bacteria has not yet been proven because there are so many periodontal bacteria.

—Dela Medina

- From the lecture we got the information that periodontal and systemic diseases has a relationship. Systemic diseases could promote periodontal disease and periodontal disease also could promote systemic disease as well.

—Fadila Khairani

- Today's lecture started at 9 a.m. by Dr. Norio Aoyama from Department of Periodontology about Periodontal Medicine. Recently the major projects in

periodontology are periodontopathic bacteria, immunologic factors, periodontal regeneration, clinical application of LASER, peri-implantitis, and periodontal medicine. Periodontal disease is an accelerator of systemic disease; therefore recently periodontal medicine becomes the new branch in periodontology.

—Ranny Rahaningrum

- As bacterial plaque deposits in periodontal pocket, it destructs periodontal tissue such as gum and alveolar bone. Systemic condition affects the progression of periodontal disease such as smoking, pregnancy, diabetes mellitus, obesity, and stress. So the periodontitis affects systemic disease and also in reverse ; such as diabetes mellitus, preterm birth, osteoporosis, aspiration pneumonia, and cardiovascular disease. Followed some researches, they got the data of periodontal bacteria existed in vascular lesions such as aneurism and mural thrombus. They also saw the increased markers of inflammatory mediators such as hsCRP, IL-6, TNF alpha, and IL-1 beta. The result that there is association between chronic periodontitis with incident of coronary heart disease, but still going on research to conclude the exact relationship. Periodontopathic bacteria do play roles in the development of cardiovascular diseases, yet the influence of bacteria has not yet been proven.

—Fenny Kamadi

- There was lecture from Norio Aoyama from department of periodontology. Periodontal medicine is the emergence of a new branch of periodontology. Periodontal disease also as an accelerator of systemic disease. Recent research suggest that periodontal pathogen are associated with several systemic disease. The kind of systemic disease that associated to periodontal disease is diabetic mellitus, cardiovascular disease, aspiration pneumonia, preterm birth, and osteoporosis. There is relationship between periodontitis and cardiovascular disease. Bacteria play roles in the development of cardiovascular disease. Bacteria that a suspect of the disease is Porphyromonas gingivalis and Prevotella Intermedia. There are some research that want to proof periodontal bacteria can promote cardiovascular disease. The result is Periodontitis is associated with several systemic disease and periodontal infection may promote vascular disease.

—Mohammad Mutawalli Makhbubi

- We had a lecture from the Department of Periodontology about Periodontal Medicine and this was a very term for me. The lecture explained to us the association between periodontitis and systemic disease, recent studies suggest that periodontal pathogens are associated with several kinds of systemic disease. One of the systemic disease is cardiovascular disease, independent of established



cardiovascular risk factors. The result of the research showed that periodontopathic bacteria play roles in the development of cardiovascular diseases. Coronary heart disease patients also had lost more teeth than patients without coronary heart disease.

—Reina Lamtiur Hutaaruk

- The lecture that has been told today is quite interesting. It is a research that show us the result that the coronary heart disease patients have lost more teeth than patients without coronary heart disease.

—Vynlia

### <University of Medicine and Pharmacy at Ho Chi Minh City>

- I was interested in Dr. Aoyama's lecture because of not only his topic in Periodontal but also his attractive introduction about Yokohama, his home town with a lot of nice views.

—Ho Thi Thuy Tien

- We learned Periodontal Medicine. Doctor Norio Aoyama gave us the lesson about "Influence of periodontitis on systemic health". He introduced us some major projects of his Department and Periodontal Medicine is one of these projects. As we can see, systemic conditions effect on the progression of periodontal diseases such as smoking, pregnancy, diabetes mellitus, obesity and stress. To understand deeply, we focused on periodontal bacteria exist in vascular lesions. The objective of his study is to clarify if periodontal bacteria promoted cardiovascular diseases. In conclusion, specific periodontal bacteria likes Porphyromonas gingivalis plays a fundamental role in the progression of vascular diseases.

—Hoang Manh Cuong

- We started the day with Dr. Aoyama's lecture about the influence of periodontitis on systemic health, particularly, cardiovascular diseases. This research indicates that periodontopathic bacteria play some role in the development of cardiovascular diseases. He also introduced a lot of landscapes in Japan such as Yokohama city, Mount Fuji...and many Japanese cuisines like soba, ramen, sushi, takoyaki... Thanks to his interesting lecture, I got ready to start a good day.

—Mai Tran Vi Na

- We learned about periodontal medicine in the morning lecture, presented by Prof. Norio Aoyam. The lesion mentioned about the relationship between periodontitis and systemic diseases, particularly cardiovascular disease.

—Nguyen Hoang Thy Van

- Today was started by Periodontal Medicine lesson given by Dr. Norio Aoyama. He lectured us about the relationship between periodontitis and systemic condition. There are a lot of factors that effect to periodontal disease such as: smoking,

pregnancy, diabetes mellitus, obesity, stress, etc. Particularly periodontitis is associated with several systemic diseases and periodontal infection may promote vascular diseases.

—Nguyen Thi Minh Khue

- Dr. Norio Aoyama gave us a lecture about Periodontal Medicine which means influence of periodontitis on systemic health. After finishing the lecture, I went to Advanced Biomaterials Department with some friends from Thailand and Indonesia. Prof. Uo introduced us general knowledge about composite resin, polymerization method, hardness test and so on. After that, he instructed us how to use the hardness testing machine to test our specimens that I had prepared (picture 1). I had 3 specimens: conventional, flowable and trial (picture 2). To finish morning lesson, other students and I discussed the result together.

—Nguyen Le Thu Thao

- I felt excited when Dr. Norio Aoyama gave a comparison between circulation and railway train that it made the lecture lively and easier for me to understand.

—Nguyen Thi Hoang Van

- I was really into Dr. Aoyama lecture. Not only I got knowledge in periodontology but also was introduced about many beautiful sightseeing and popular food of Japanese. It made his presentation more interesting. I hope I could have a chance to visit all places and taste all dishes he recommended.

—Vo Dang Thao Nguyen

5. 10/22(木) 歯学教育開発学分野 關 奈央子 助教

口腔病理学分野 Dr. Nguyen Thi Kim Chi

インプラント・口腔再生医学分野 Dr. Lia Kartika Wulansari

口腔放射線医学分野 Dr.Supak Ngamsom

*“Introduction of TMDU –Graduate School of Medical and Dental Science”*





# Introduction of Tokyo Medical and Dental University

## Graduate School of Medical and Dental Sciences

## RESEARCH and GRADUATE PROGRAMS

- ✧ RANKINGS
- ✧ INTERNATIONALIZATION
- ✧ GRADUATE PROGRAMS in DENTISTRY

**TMDU ranked #1 in the Nation and #6 in the World in Dentistry by QS World University Rankings**

The new QS World University Rankings by subject was published on April 29, 2015.

Tokyo Medical and Dental University (TMDU) is ranked #1 in Japan and #6 in the World in dentistry.



The QS World University Rankings by Subject published on April 29, 2015, based on the (Quacquarelli Symonds) World University Rankings which are published at the beginning of the academic year, highlight the world's top universities in 36 individual subjects, based on academic reputation, employer reputation and research impact (Fig.1).

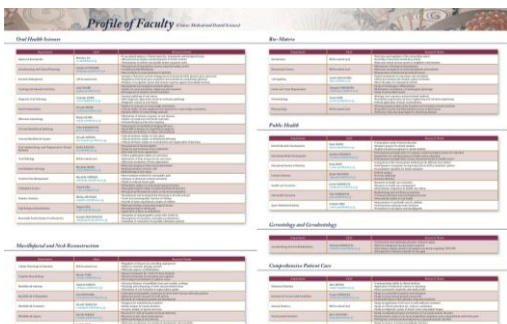
In this ranking, TMDU distinguishes itself in dentistry where it is ranked #1 in Japan and #6 in the World. (Fig.2)

In Medicine, TMDU is ranked #4 in Japan and #101-150 in the World.

<http://www.tmd.ac.jp/english/news/qsu/subject2015/index.html>

**TMDU  
(Dentistry)  
ranked #6 in  
the world**


## Sections/Departments



The image shows a detailed faculty profile page with multiple tables listing faculty members, their titles, and contact information across various departments.

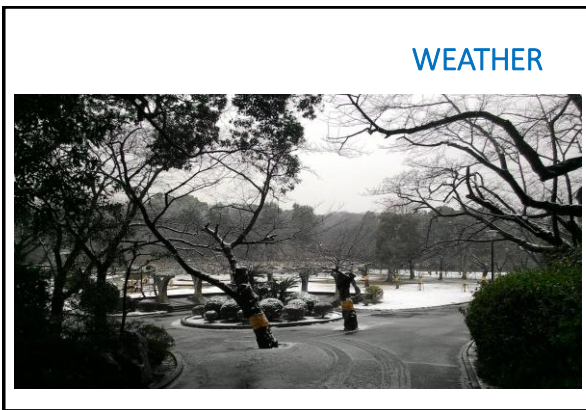
## PhD students life

- Dr Lia, 2<sup>nd</sup> year**  
(Oral Implantology and Regenerative Dental Medicine)
- Dr Supak, 3<sup>rd</sup> year**  
(Oral & Maxillofacial Radiology)
- Dr Chi, 4<sup>th</sup> year**  
(Oral Pathology)



**LIA K. WULANSARI**

**2<sup>ND</sup> year PhD student**  
**ORAL IMPLANTOLOGY AND REGENERATIVE DENTAL  
MEDICINE**



## PhD students life

Dr Lia, 2<sup>nd</sup> year  
(Oral Implantology and Regenerative Dental Medicine)

Dr Supak, 3<sup>rd</sup> year  
(Oral & Maxillofacial Radiology)

Dr Chi, 4<sup>th</sup> year  
(Oral Pathology)

## Research Subjects

- Trigeminal Neuralgia: evaluation of neuralgic manifestation and site of neurovascular compression with 3D CISS MR imaging and MR angiography (Yoshino N et al. Radiology 2003; 228: 539-545)
- Inhibition of the Extracellular Signal-regulated Kinase (ERK) Pathway Induces Radioresistance in Rat 3Y1 Cells. (Watanabe H et al. Int. J. Radiat. Biol. 2004; 80: 451-457)
- A Potential Pitfall of MR Imaging for Assessing Mandibular Invasion of Squamous Cell Carcinoma in the Oral Cavity (Imaiuzmi A et al. AJNR Am J Neuroradiol 2006; 27: 114-122)
- MRI findings of temporomandibular joints with disk perforation (Kuribayashi A et al. Oral Surg Oral Med Oral Pat Oral Radiol 2008; 106: 419-425)

## 3<sup>rd</sup> Year PhD Life



- Clinical Observation  
"CBCT, MDCT, MRI"

Self study and observation from the list of interesting cases and daily clinical cases.

## 3<sup>rd</sup> Year PhD Life



- Attended a domestic conference in Sendai



## The Tutor System

- Managing important documents ;  
*Residence Card, National Health Insurance Card, Dormitory document, Student card etc.*

- Helping about necessary things in Japan ;  
*Cell phone, Monthly train ticket, private apartment etc.*

- Guiding about studying in TMDU;  
*Subjects, Laboratories and Research.*

- Being a good Japanese friend ^\_\_^



**TMDU**  
東京医科歯科大学

**NGUYEN THI KIM CHI, DDS**  
4<sup>th</sup> grade PhD student

Department of Oral Pathology  
Graduate School of Medical and Dental Sciences  
Tokyo Medical & Dental University

**Oral Pathology Institutions in TMDU**

- Graduate School: Department of Oral Pathology
  - Clinical-pathological studies on oral cancer
  
- Dental Hospital: Department of Diagnostic Oral Pathology
  - Practice of diagnostic pathology in oral lesions

**Oral Pathology Institutions in TMDU**

➤ Graduate School: Department of Oral Pathology

Molecular technique

DNA

Protein

Cell

Tissue

Organ

Mouse

Human

**Keratin 17 promotes tumor growth in oral cancer**

Carcinoma in situ

		KRT17	
		Normal	Cancer
KRT17	+/+	50	0
	0/+	0	15
	0/0	0	35

**Keratin 17 promotes tumor growth in oral cancer**

HSC3

HSC3-KO

tumor area (mm<sup>2</sup>)

THANK YOU

## *Report from students V*

### <Chulalongkorn University>

- We attended the class “Introduction of TMDU : Graduate School of Medical and Dental Science” which contains 3 main topic : rankings, internationalization and graduat programs in dentistry. TMDU was ranked no.6 of dental school of the world. Also, 2 special guests were invited to the class. The first one is Lea K. Wulansari, 2nd year PhD student in oral implantology and regnerative dental medicince, while the second one is Nguyen Thi kim Chi, 4th grade PhD student of department of Oral pathology. Both of them came to talk about PhD life in each year, motivating us to attend the program incase we’re interested and recommending things we should know about TMDU life.

—Apisarid Chonlapat-Apiwich

- In mini-lecture session there were 3 international students from Indonesia, Thailand and Vietnam. They talked about their PhD life in their department including implantology, radiology and oral pathology department.

—Kornkamol Lunjanasatienchai

- The lecture of this last day was about post-graduation studying in TMDU. There were three different departments and also from departments and also from different year. Mostly the life here told by the three students went through a lot of difficulties; culture, weather, and especially language. However everyone is glad to be here and they agree that coming here has gained more than lose.

—Noramon Chakthranont

- Today's lecture was about the introduction of Tokyo Medical and Dental University. There were 3 lecturers from 3 countries; Thailand, Indonesia, and Vietnam. They talked about PhD student life. I was impressed by TMDU's tutor system. The senior of the department would help the new student not only on the academic stuffs, but also with your daily life. The tutor would advise you on how to adapt yourself with Japanese culture. This will make the foreign students feel more comfortable in Japan.

—Phan Bhongsatiern

- The special lecture in the morning was quite interesting for me since I am already 6th year student and is now thinking about future career. The lecturer who is also international student shared their experienced in Japan and gave us a brief overview of postgraduate course in TMDU.

—Ploypailin Manovilas



### <Srinakharinwirot University>

- The presentation was very impressive and useful. Every post graduate students love to be in TMDU. I think studying aboard is very a wonderful opportunity to experience something new and learn the new culture. In my opinion, Japan is one of the interesting countries for studying. Not only the knowledge we get, but also the new language, the experience and friends. Japan has a very good health care system and people living here have a high quality of life. Japan culture and life style are very interesting for me. I wonder how they can train their people to have such a high responsibility and be discipline.

—Chithathai Wongwitdecha

- I learn the topic: Graduate School of Medical and dental sciences. This topic is about the life in TMDU not only in studying but also the lifestyle in Tokyo. In the first year, The foreign students must learn the Japanese course to communicate with Japanese people. In the later years, all of the student observe the clinic interesting case, and do a research. When they study, they study so hard but when they rest , they rest hard ,too.

—Nithinan Thirapongpaisal

- I learned about graduate school of Medical and Dental Sciences from three sisters who are studying in Ph.D in three different departments about their Ph.D life. They told us in the same things that if you are a foreigner dental student, you could observe, be assistance and have some conferences or seminars but you could not treat the patient by yourself because you do not have Japanese dental license.

—Sirinthra Priyadumkol

- I have studied about Graduate School of medical and Dental sciences. Teacher told me about research and graduate programs in dentistry and roduced us to know PhD student life. First one, Oral presenter is Lia from oral implantology and regenerative dental medicine.

—Suthinee Kanokpoonsin

- I had got to know about the Graduate school of medical and dental science, Tokyo medical and dental University. TMDU ranked number six in the world. First, the PhD students had to be provided language school and made new friends. Then, they have to do the researches, clinical observation, attended a domestic conference and practicing (for diagnosis).

—Thanaporn Ngamsakulwong

### <University of Indonesia>

- I think someday I could come again to TMDU to study more. TMDU would be a good school as it is the 6<sup>th</sup> grade in QS world ranking and Japan would be a good country where it is safe to go anywhere anytime. —Bernard Kurniawan
- I learn about more about academic and non-academic life in TMDU. So far the knowledge I get from today's lecture makes my mind open to study for higher degree in TMDU. Because I am interested in some research topic and I feel like we, foreign exchange students, were very welcomed here. Especially if we want to come back here again to study hard and learn more about dentistry. —Dela Medina
- A well developed knowledge and technology really motivated me to continue my further study (graduate school) at TMDU. After seeing the presentation about their PhD life I think that I could survive as they did, hopefully so. I'll do my best to pursue my dreams! —Fadila Khairani
- I learnt a lot about what we might will experience in graduate school especially as students who taking Ph.D in TMDU. I think it will be a nice experience to stay in foreign country, learning their language, and living their lifestyle. I think health care economic is an interesting topic and I never found in Indonesia. —Fenny Kamadi
- In the morning at 09.00 am there was lecture from foreign student that studying in TMDU. They come from Indonesia, Vietnam, and Thailand. They share about their experience when they studying in TMDU. TMDU has graduate school of medical and dental science. There is a curriculum policy for doctoral degree that are four year course, matriculation in October, and graduation in September. —Mohammad Mutawalli Makhbubi
- We got a sharing session about PhD life of TMDU foreigner students. There are three students who shared their experiences and they came from different department of TMDU. We learned that in TMDU we could get a tutor to help us adapt with the new environment. The students also shared about their research for us. —Reina Lamtiur Hutauruk
- I was told about the PhD international student's life in TMDU. The international TMDU student are studying in different departments in TMDU and they seem to enjoy it very much. To do research and to study are their motivations to survive the university's life. Not only studying, but also they are having tours around Japan. —Vynlia

### <University of Medicine and Pharmacy at Ho Chi Minh City>

- I was inspired by several presentation of four sisters about graduate as well as postgraduate programs at TMDU. After listening to the four sisters' speeches, my wish of studying in Japan has grown more and more.  
—Ho Thi Thuy Tien
- The lecturer introduced us about the TMDU and International students here. TMDU - Tokyo Medical and Dental University is unique among medical and dental universities in Japan: they have three divisions dedicated to graduate education and research : Medical and Dental Sciences, Health Care Sciences and Biomedical Sciences. Then, we were given some informations about the goals, qualities and also the Departments. Moving the next part, we had a chance to know more about the International Students' lives in TMDU. There were three PhD students who are conducting research in TMDU from different nations and they shared about research experiences and life in Japan as well.  
—Hoang Manh Cuong
- I'm interested in DDS. Chi's research about Keratin 17 promotes tumor growth in oral cancer. Besides that, she also shared her experience about PhD student's life in TMDU. She said if you want to reach PhD in TMDU the first you have to remember is to be hard working but don't worry because you would also play hard and enjoy your life in Japan.  
—Mai Tran Vi Na
- Now I am just an undergraduate student but I have plan for my postgraduate studying after graduation. As what I see in this short training program, I think TMDU is a good choice for me. However, language barrier is the biggest challenge to me. TMDU seems to understand this problem very well when they have been holding various classes of language to help international students improve their Japanese. PhD students also gave us some ideas about their life in Japan, not just inside but outside academic life. Work hard – Play hard. Last but not least, the most important thing to everyone is sefl-motivation. In case I want to go abroad, these information will be helpful.  
—Nguyen Thi Minh Khue
- I started today with the lectures “Introduction of Tokyo Medical and Dental University” and “PhD students life” of 3 PhD students, who was studying at TMDU. After graduating the university, I am planning to study continuous. Therefore, the lectures of 3 PhD students were useful for me.  
—Nguyen Le Thu Thao
- I was impressed with the introduction of TMDU as well as the Ph.D students' lectures. As to be known, TMDU ranked first in the Nation and sixth in the world in Dentistry by QS World University Rankings. Moreover, I have had a different view of student life as TMDU students don't just focus on studying and doing research

hard to gain knowledge but they also participate in many social activities and enjoy the landscapes in Japan. I admired the Ph.D students so much as they were so talented, creative and active. They also motivated me to study post graduate program in a place which was well known of developed techniques and high competitive environment as Japan. —Nguyen Thi Hoang Van

- The lecture I received today was so fresh and useful. It was like a sharing time of the seniors to me. I got to know about post-graduate study and life. Even though there were many difficulties, it would be really amazing to become a PhD student in TMDU. I hope I could have an opportunity to study here and contribute to the development of dental sciences. —Vo Dang Thao Nguyen







〒113-8510 東京都文京区湯島 1-5-45

東京医科歯科大学 国際交流センター

「大学の世界展開力強化事業」運営委員会