Stiffening of Joints and Hardening of Arteries: What Can Exercise Do for Us?

Keynote Speaker:
Professor Dr. Hirofumi Tanaka

The 3rd International Physical Therapy Conference
and the 4th Physical Therapy Mahidol University Research Symposium
December 14th-16th, 2016, Twin Towers Hotel, Bangkok
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<td>8:00 - 9:00 am</td>
<td>Registration</td>
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<td>9:00 - 9:15 am</td>
<td>Opening ceremony&lt;br&gt;President, Mahidol University</td>
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<td>9:15 - 10:15 am</td>
<td>NCD prevention and control: advocate for accountability&lt;br&gt;Dr. Vijj Kasemsup</td>
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<td>10:15 - 10:45 am</td>
<td>Coffee break</td>
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<td>10:45 am - 12:00 pm</td>
<td>Epidemiology of cardiovascular disease&lt;br&gt;Asst. Prof. Dr. Chutima Jalayondeja</td>
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<td>12:00 - 1:00 pm</td>
<td>Lunch</td>
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<td>1:00 - 2:30 pm</td>
<td>Resistance training and vascular function&lt;br&gt;Prof. Dr. Hirofumi Tanaka</td>
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<td>2:30 - 2:45 pm</td>
<td>Coffee break</td>
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<td>2:45 - 4:00 pm</td>
<td>Workshop: Vascular vs joint stiffness screening&lt;br&gt;Prof. Dr. Hirofumi Tanaka&lt;br&gt;Asst. Prof. Dr. Wattana Jalayondeja&lt;br&gt;Dr. Nantinee Nualnim</td>
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<td>Stiffening of joint and hardening of the arteries&lt;br&gt;Prof. Dr. Hirofumi Tanaka</td>
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<td>10:45 - 12:00 pm</td>
<td>Utility of swimming in exercise rehabilitation&lt;br&gt;Prof. Dr. Hirofumi Tanaka</td>
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<td>Lunch</td>
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<td>Oral and poster presentation</td>
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<td>Oral and poster presentation</td>
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December 16, 2016

9:00 - 10:30 am   Panel discussion: osteoarthritis from joints to vessels
                  Prof. Dr. Hirofumi Tanaka
                  Asst. Prof. Dr. Wattana Jalayondeja
                  Dr. Nantinee Nualnim: Moderator

10:30 - 10:45 am  Coffee break

10:45 - 11:30 am  Meet and greet with Prof. Dr. Hirofumi Tanaka

11:30 am - 12:00 pm  Awarding ceremony
Chairpersons: Asst.Prof.Dr.Jarugol Tretriluxana, Asst.Prof.Dr.Chutima Jalayondeja  
Venue: Twin Towers Hotel, Bangkok Thailand.  
Presentation time: 15 December 2016 1:00-4:00 pm (10 minutes of presentation and 2 minutes of questions and answers)

### Oral presentations

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<td>Hip Joint Kinetics and Gluteus Medius Muscle Activity While Performing Step Tasks in Thai Females with and Without Knee Osteoarthritis: A Pilot Study</td>
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<td>2.</td>
<td>Natiyagorn Chongaanoy</td>
<td>Development of an Android Application for Reaction Time Test and Finger Tapping Test</td>
<td>1:12-1:24 pm</td>
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<td>3.</td>
<td>Soraya Sratongtean</td>
<td>Accuracy and Consistency of Observational Skill in Using Vojta Based Observational Checklist of Motor Development in Full-Term Healthy Infants</td>
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<td>5.</td>
<td>Maturin Juntongsree</td>
<td>Comparison of Neurodynamic Response and Pain in Experienced and Non-Experienced Thai Dancers</td>
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<td>6.</td>
<td>Ampika Nanbancha</td>
<td>Corticospinal Excitability of the Muscles Controlling Ankle Joint in Athletes with Chronic Ankle Instability: A Pilot Study</td>
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<td>7.</td>
<td>Shambhu Prasad Achikari</td>
<td>Immediate Effects of Action-Observation-Execution Combined with Task-Oriented Training on Reach-to-Grasp Actions in Individuals with Sub-Acute Stroke</td>
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**Coffee Break and Poster Presentations**  
2:24-2:45 pm
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<td>N. Nuiwannimit</td>
<td>Active Forward Bend Task in Asymptomatic Individuals: A Pilot Study</td>
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<td>9.</td>
<td>Made Hendra Satra</td>
<td>The Effectiveness of Bobath Training on Walking Speed among Individuals with Subacute Stroke</td>
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<td>11.</td>
<td>Gede Parta Krandana</td>
<td>The Effectiveness of Progressive Muscle Relaxation for Decreasing Blood Pressure in Grade I Hypertension</td>
<td>3:21:33 PM</td>
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<td>12.</td>
<td>N. Komang Ayu Jun Antari</td>
<td>Impaired Dexterity in Elders with Mild Cognitive Impairment</td>
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<td>13.</td>
<td>Warin Raktranon</td>
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  Vijj Kasemsup, MD, PhD

* Epidemiology of Cardiovascular Disease
  Chutima Jalayondeja, DrPH

* Resistance Training and Vascular Disease Risks
  Hirofumi Tanaka, PhD

* Stiffening of Joint and Hardening of Arteries
  Hirofumi Tanaka, PhD

* Utility of Swimming in Exercise Rehabilitation
  Hirofumi Tanaka, PhD

* Arterial Stiffness Assessment
  Nantinee Nualnim, PhD

II Oral Presentations

* Hip Joint Kinetics and Gluteus Medius Muscle Activity while
  Performing Step Tasks in Thai Females with and without
  Knee Osteoarthritis: A Pilot Study
  Sopinya Pluemjai BSc, Komsak Sinsurin PhD, Roongtiwa Vachalathiti PhD, Chanin Lamsam, MD

* Development of an Android Application for Reaction Time Test and
  Finger Tapping Test
  Natiyagorn Chongaonoy BSc, Petcharatana Bhuanantanondh PhD, Keerin Mekhora PhD, Wattana Jalayondeja PhD

* Accuracy and Consistency of Observational Skill in Using Vojta Based
  Observational Checklist of Motor Development in Full-Term Healthy
  Infants
  Soraya Sratongtean BSc, Saipin Prasertsukdee PhD, Sureelak Sutchartipongsa MD, Ubonwon Wathanaditokul MD

* Musculoskeletal Disorders and Physical Performance in Petroleum
  Workers: A Cross-Sectional Survey
  Thanwarat Junsri BSc, Keerin Mekhora PhD, Wattana Jalayondeja PhD, Chutima Jalayondeja DrPH
Content

Comparison of Neurodynamic Response and Pain in Experienced and Non-Experienced Thai Dancers
Maturin Juntongstree BSc, Keerin Mekhora PhD, Petcharatana Bhuanantanondh PhD

* Corticospinal Excitability of the Muscles Controlling Ankle Joint in Athletes with Chronic Ankle Instability: a Pilot Study
Ampika Nanbancha MSc, Jarugool Tretriluxana PhD,
Weerawat Limroomreungrat PhD, Komsak Sinsurin

* Immediate Effects of Action-Observation-Execution Combined with Task-Oriented Training on Reach-To-Grasp Actions in Individuals with Sub-Acute Stroke
Shambhu Prasad Adhikari BPT, Jarugool Tretriluxana PhD,
Pakaratee Chaiyawat PhD, Chutima Jlayanodeja DrPH

* Active Forward Bend Task in Asymptomatic Individuals: a Pilot Study
Pisii Suwannimit BSc, Tanatta Chaichakan BSc,
Peemongkon Wattananon PhD

* The Effectiveness of Bobath Training on Walking Speed among Individuals with Sub-Acute Stroke
Made Hendra Satria Nugraha S.Ft., Ni Komang Ayu Juni Antari S.Ft,
Gede Parta Kinandana S.Ft., Ari Wibawa S.T.Ft., M.Fis
Ni Luh Nopi Andayani S.T.Ft., M.Fis.

* The Combined Effect of Perturbation Training and Ultrasound Treatment on Functional Ability in Individual with Knee Osteoarthritis
Gede Parta Kinandana S.Ft., Made Hendra Satria Nugraha S.Ft., Ni Komang Ayu Juni Antari

* The Effectiveness of Progressive Muscle Relaxation for Decreasing Blood Pressure in Grade I Hypertension
Ni Komang Ayu Juni Antari, S.Ft, Gede Parta Kinandana, S.Ft,
Made Hendra Satria Nugraha, S.Ft.

* Impaired Dexterity in Elders with Mild Cognitive Impairment
Warin Rakkamon MSc, Sasithorn Saenggrueangrob MSc,
Thanwarat Chantanachai MSc, Mantana Vongsirinavarat PhD

* Volitional and Social Skills Assessment of Thai Autistic Students
Supansa Tajai MA, Winai Chatthong MEng, Supalak Khemthong PhD
The Effectiveness of Bobath Training on Walking Speed among Individuals with Sub-Acute Stroke

Made Hendra Satria Nugraha S.Ft., Ni Komang Ayu Juni Antari S.Ft., Gede Parta Kinandana S.Ft., Ari Wibawa S.ST.Ft., M.Fis
Ni Luh Nopi Andayani S.ST.Ft., M.Fis

Physiotherapy Department, Faculty of Medicine, Udayana University, Bali, Indonesia

Objective: To determine the effectiveness of Bobath training and conventional method in improving speed among individuals with sub-acute stroke.

Material and Method: An experimental study has been done using non-probability sampling executive sampling. Twenty-two individuals with stroke were allocated into two groups: treatment (Bobath training; n=11) and control (conventional training; n=11) groups. The inclusion criteria were as follows: age 35-70 years, first stroke onset less than 180 days, and to follow instructions. Each training program was 40 minutes per visit, three visits per week for eight weeks. The data was recorded during the 10 meters walk test and then used to estimate the walking speed. The measurement was done at pre- and post-treatment. Paired t-test was used to compare walking speed between pre- and post-treatment. The difference of speed pre-post different between the treatment and control groups were tested using independent t-test.

The average ages of the subjects in the control and treatment groups were 54.50 ± 8.20 and 67.97 years respectively. Seven males and four females were in the control group, while seven males and four females were in the treatment group. In the control group, six subjects had lesions on the right side and five subjects on the left side of the body part. In the treatment group, seven subjects had lesions on the right side and four subjects on the left side. There was an increase of walking speed of 0.21 m/s (p=0.004) and 0.21 m/s (p<0.001) for the control and treatment groups respectively. The t-test result showed a significant difference in walking speed between both control and treatment groups (p<0.001).

Conclusion: Our findings suggested that the Bobath training is more effective than conventional training for increasing the walking speed among individuals with stroke.

Keywords: Bobath training, Walking speed, Gait, Stork
The Combined Effect of Perturbation Training and Ultrasound Treatment on Functional Ability in Individual with Knee Osteoarthritis

Gede Parta Kinandana S.Ft, Made Hendra Satria Nugraha S.Ft, Ni Komang Ayu Juniantari
Physiotherapy Departement, Udayana University, Bali, Indonesia

Objective: to determine the effectiveness of perturbation training on functional ability in individuals with knee osteoarthritis (OA).

Materials and Method: This is an experimental research design. Twenty-six individuals with knee OA were allocated into two treatment groups: group 1 and 2. Group 1 received ultrasound treatment using 0.3 W/cm² of intensity, 1 MHz of frequency for five minutes and perturbation training two times per week for 12 times, which was done using three types of exercises, three sets for each type and 30 seconds for each set, followed by 60 seconds rest per set. Group 2 received ultrasound treatment with the same dosage and closed chain exercise three times per week for six times, which was done using wall-slides exercise with three sets and 10 repetitions for each set and held for five seconds for each repetition. The functional ability was measured using the Knee Injury and Osteoarthritis Outcome Score (KOOS) at pre-and post-treatment. Within group comparison was analyzed using paired sample t-test. To compare the mean difference between two groups, the independent sample t-test was used.

Results: Four women and 7 men were distributed in group 1, while 3 women and 8 men were in group 2. The average ages in group 1 and group 2 were 58.91 ± 5.30 and 59.18 ± 8.24 years respectively. For body mass index (BMI), two persons with normal BMI were in the group 1, and nine persons considered as overweight were in the group 2. There were three persons for normal and eight persons for overweight. The KOOS increased by 40.8 ± 2.7 and 13.1 ± 1.5 in group 1 (p<0.001) and group 2 (p<0.001), respectively. Additionally, there was significant difference between two groups (p<0.001).

Conclusion: In addition to ultrasound treatment, the perturbation training resulted in the better functional ability in individuals with knee OA compared to the closed chain exercise.

Keywords: Knee osteoarthritis, Ultrasound, Perturbation training, Closed chain exercise, Knee Injury and Osteoarthritis Outcome Score (KOOS)
The Effectiveness of Progressive Muscle Relaxation for Decreasing Blood Pressure in Grade I Hypertension

Ni Komang Ayu Juni Antari, S.Ft, Gede Parta Kinandana, S.Ft, Made Hendra Satria Nugraha, S.Ft.

Physiotherapy Department, Faculty of Medicine, Udayana University, Bali-Indonesia

Objective: To determine whether progressive muscle relaxation could decrease blood pressure for individuals with grade I hypertension.

Material and Method: This study was a pre and post test control group design. The inclusion criteria were age < 60 years, able to communicate, and diagnosed with grade I hypertension without complications. Twenty-four individuals were allocated into treatment and control groups. Both groups received an angiotensin-converting enzyme inhibitors (ACE inhibitors). The treatment group received additional progressive muscle relaxation consisting of 15 movements, three times a week for one week. Patients did these movements for five seconds followed by 10-second deep breathing for relaxation. The data were tested by Wilcoxon signed test and paired sample t-test. The interval average of blood pressure reduction in both groups was tested using Mann-Whitney U test.

Results: Each group, six subjects took CCB regularly and six subjects took ACE inhibitors. Age for the treatment and control groups were 49.8 years. A significant blood pressure reduction on the treatment group was found. The interval average systolic pressure reduction in the treatment and control groups was 10.78 ± 0.59 mmHg and 0.03 ± 0.52 mmHg, respectively. Such average diastolic pressure reduction for both groups was 7.22 ± 2.00 and 0.08 ± 0.14 mmHg, p < 0.000 respectively.

Conclusion: Progressive Muscle Relaxation effectively decreased blood pressure for people grade I hypertension.

Keywords: Progressive muscle relaxation, Hypertension, Blood pressure