



PROCEEDING ABSTRACT BOOK

The 28th International Physiology Seminar and
Annual Meeting of Indonesian Physiology Society
(SIPSAM)

Semarang, 12-13 July 2019
Organized by Indonesian
Physiology Society (IAIFI)

Faculty of Medicine
Diponegoro University



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“The role of physiology for better health and quality of life”

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Diponegoro University**

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“The role of physiology for better health and quality of life”

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Welcome Message



First of all, thanks to **God**, the most merciful, beneficent and compassionate, for His blessing that this conference could be held today.

I would like to express my greatest gratitude to Dr. dr. Ermita Isfandiary Ibrahim Ilyas, MS, AIFO; Chairperson of Indonesian Physiology Society and Dr.dr. Dwi Pudjonarko, M.Kes, Sp.S (K), Dean of Faculty of Medicine Diponegoro University, for all of their kind supervision during the preparation of this event. I would like to express my sincere gratitude to all of the committee members for all of your hard work, kind help, and best effort as a solid team work, by which this event can be held successfully today.

I would like to thank all of the honorable SIPSAM speakers for your willingness to come and give lectures here, and all of participants from various institutions in the world.

Welcome to **The 28th International Physiology Seminar and Annual Meeting of Indonesian Physiology Society (SIPSAM)**, It is a great pleasure to have all of you here in SIPSAM, Semarang Indonesia, on this July 12-13, 2019. We're excited about this two-day opportunity for leading scientists and clinicians from around the world to meet, present and collaborate.

SIPSAM in this year focuses on some highlight topics which are Neurophysiology; Exercise Physiology and Nutrition; Stem Cell and Regenerative Medicine; Teaching Physiology; Cardiovascular Physiology; Physiological Aspect in Elderly, Ergonomics, and Miscellaneous which have been of interest to hundreds researcher and clinician that want to share their interesting research problems.

As a major goal of this event, we hope that it can be an excellent chance to discuss interesting ideas and develop fruitful project in the future, network opportunities with old and new colleagues, coordination new partnerships which advance collaboration either about the research field or not, as well as the careers of all participants.

SIPSAM is held on Semarang, a fascinating city with rich history and tradition of Java. It is a beautiful city, located on Central of Java, near Borobudur temple; one of Wonders of the World.

Please enjoy your participation in SIPSAM and have a great experience during your stay in Semarang.

Wish you the best in all your work.

Yosef Purwoko, MD, M.Sc, Internist, Geriatrician

Organizing Chairperson

SIPSAM 2019

Welcome Message



Praise to the God Almighty for **The 28th International Physiology Seminar and Annual Meeting of Indonesian Physiology Society (SIPSAM) 2019** and I am very excited for this event and we welcome to all of the participants and speakers to this event. The special acknowledgement, I address to the distinguished speakers Prof. Gerard Pals, Ph.D From VU University Medical Center, Amsterdam - The Netherlands, Prof. Chia-Hua Kuo, Ph.D, FACSM From University of Taipei, Taiwan, Prof. Dr. Cheng Hwee Ming from University of Malaya, Malaysia, Mohd Farooq Shaikh, M.Pharm, Ph.D From Monash University, Malaysia, and all of the speakers. I am very grateful for your willingness to attend and share your knowledge to us.

I wish that this event will give a big contribution on sharing knowledge and information about physiology sciences for the academic members, researchers and all of the participants. I also would like to appreciate to all of the committee members for their effort and hard work so that this event can happen.

Once again, welcome to The 28th International Physiology Seminar and Annual Meeting of Indonesian Physiology Society (SIPSAM) 2019, I hope that all of you enjoy your stay at Semarang and we will see you again on the next event.

Ermita Isfandiary Ibrahim Ilyas, MD, MS, Ph.D, AIFO
Chairperson of Indonesia Physiological Society

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Scientific Programme

THE 28th INTERNATIONAL PHYSIOLOGY SEMINAR
& ANNUAL MEETING OF INDONESIAN PHYSIOLOGY SOCIETY (SIPSAM)
GRASIA HOTEL SEMARANG, 12-13 JULY 2019

Jam	Day I (Friday, 12 July 2019)		
	Topic: Neurophysiology, Exercise Physiology & Nutrition, Stem Cell and Regenerative Medicine		
07.30 - 08.00	Registration and Coffee Break		
08.00 - 08.20	MC: Mohammad Arif Ali, S.Si., M.Sc and dr. Darmawati Ayu Indraswari, M.Si.Med Opening Speech (Organizing Chairperson, Indonesian Physiology Society Chairperson), sing "Indonesia Raya" and "Hymne IAIFI"		
08.20 - 08.40	Topic : Ethical Aspect on Animal and Human Resarch (dr. Djoko Widiyarto, JS, DHM, M.Kes)		
	Plenary Session Day 1 (Moderator : dr. Yuriz Bakhtiar, Ph.D, Sp.BS) :		
08.40 - 09.20	Prof.dr. Zainal Muttaqien, Ph.D, Sp.BS(K) : Learning and Developing Research in Neurophysiology from Epilepsy cases		
09.20 - 10.00	Prof. Chia-Hua Kuo, Ph.D : How Exercise and Protein Diet Impact Human Aging		
10.00 - 10.40	Prof. Gerard Pals, Ph.D : Stem Cells and Transdifferentiation		
10.40 - 11.00	Discussion		
11.00 - 11.30	Poster Presentation Session 1		
11.30 - 13.00	Jumah Prayer and Lunch		
	Invited Lectures		
	Grup I (Neuroscience and Renal Physiology)	Grup II (Exercise Physiology & Nutrition)	Grup III (Stem Cell and Regenerative Medicine)
	Moderator: dr. Darmawati Ayu I, M.Si.Med	Moderator: Dr. dr. Mahalul Azam, M.Kes	Moderator: dr. Ferdy KC, M.Si.Med, Ph.D
13.00 - 13.05	Introduction	Introduction	Introduction
13.05 - 13.30	dr. Yuriz Bakhtiar, Ph.D, Sp.BS	Prof. Chia-Hua Kuo, Ph.D	Prof. Gerard Pals, Ph.D
	The impact of different type somatotropinomae to its endocrinology features	Abdominal fat reducing outcome of exercise training: fat burning or hydrocarbon source redistribution?	Application of Genetic Testing for The Future Personalized Medical Treatment
13.30 – 13.55	Dr. dr. Hardian	Prof. Dr. dr. A. Purba, MS, AIFO	Prof. Dr. dr. Susilo Wibowo, Sp.And
	Physiological View of Autonomous Sensory Meridian Response	Strategies in Generating Gold Generation: Physiological Application for Lowering Prevalence of Stunting and Catastrophic Diseases	Unlocking kidney regeneration: genomics, proteomics, and gene regulation puzzles
13.55 - 14.20	Dr. dr. Shofa Chasani, Sp.PD, KGH, AIFM	Dr. dr. Ermita Isfandiary Ibrahim Ilyas, MS, AIFO	dr. Bahrudin, M.Si.Med, Ph.D, Sp.JP, FIHA
	The role of angiotension in hipertension and kidney disease	The physiological and biomolecular mechanism of exercise as a medicine for prescribing exercise	Recombinant DNA technology in regenerative medicine: an idea of creating biological pacemaker



Scientific Programme

14.20 – 14.35	Discussion	Discussion	Discussion
14.35 – 14.45		Sponsor Presentation	
14.45 – 15.00	Coffee Break		
15.00 – 17.00	Oral & Poster Presentation	Oral & Poster Presentation	Oral & Poster Presentation
	12 paper @10 min	12 paper @10 min	12 paper @10 min
19.00 - 21.55	Welcoming / Gala Dinner and Annual Meeting of IAIFI (Venue: GUNTUR room, Grasia Hotel Semarang, 1st floor)		

RUNDOWN OF GALA DINNER (FRIDAY, 12 JULY 2019)

TIME	SCHEDULE
19.00 – 19.05	Opening from MC (Alif Muhammad Sudarmanto and Tsamara Nurwina Nugroho)
19.05 – 19.10	Traditional dance Warag Dugder
19.10 – 19.20	Opening Speech of Representative Dean (Dean Faculty of Medicine Diponegoro University)
19.20 – 19.30	Speech of Semarang Mayor (Walikota Semarang)
19.30 – 19.40	Traditional Dance “Tari Saman” show
19.40 – 19.50	Speech of the representative of foreign speaker
19.50 – 19.55	Photo Session (Walikota, IAIFI Chairperson, Dean, All Speaker, All Organizing Chairperson)
19.55 – 20.05	Photo session with all participants
20.05 – 20.15	Closing of Gala Dinner & Performance from “Il Medico choir”
20.15 – 20.20	Opening of Annual Meeting from MC
20.35 – 20.45	Speech of Indonesian Physiology Society Chairperson and Opening for Annual Meeting of Indonesian Physiology Society
20.45 – 21.55	The 28th Annual Meeting of Indonesian Physiology Society
21.55	Closing of Annual Meeting

Scientific Programme

Jam	Day II (Saturday, 13 July 2019)		
	Topic: Teaching Physiology, Plant and Animal Physiology, and Selective Topics of Physiology		
07.30 – 08.00	Registration		
08.00 – 08.05	Opening (MC: Mohammad Arif Ali, S.Si., M.Sc and dr. Lathifa Putri Fauzia)		
	Plenary Session Day II (Moderator : dr. Muflihatul Muniroh, M.Si.Med, Ph.D)		
08.05 – 08.10	Introduction		
08.10 – 08.45	Prof. Dr. Cheng Hwee Ming A: Enjoying Physiology in Kidneyland		
08.45 – 09.20	Mohd Farooq Shaikh, M.Pharm, Ph.D : Small Fish, Big Impact: Zebrafish in Experimental Neurology		
09.20 – 09.55	Prof. Dr. drh. Agik Suprayogi, M.Sc.Agr, AIF: Challenges of Animal and Plant Physiologis In Facing The Fourth Industrial Revolution: Concept of Agromaritim Research 4.0 Development		
09.55 – 10.10	Discussion Session		
10.10 – 10.15	Closing of plenary session		
10.15 - 10.30	Coffee Break		
10.30 - 12.10	Oral & Poster Presentation 10 paper @10 min	Oral & Poster Presentation 10 paper @10 min	Oral & Poster Presentation 10 paper @10 min
12.10 - 13.00	Lunch and Prayer Session		
	Invited Lectures		
	Grup I (Teaching Physiology) Moderator: Dwi Gansar Santi, S.Pd., M.Pd	Grup II (Plant and Animal Physiology) Moderator: Dr. Erma Prihastanti, M.Si	Grup III (Selective Topics of Physiology) Moderator: dr. Ainun Rahmasari G, M.Si.Med
13.00 -13.05	Introduction	Introduction	Introduction
13.05 - 13.25	Prof. Dr. Cheng Hwee Ming A	Mohd Farooq Shaikh, M.Pharm, Ph.D	Prof.Dr.dr. I Nyoman Adiputra, MOH
	Inspiring Students to learn Respiratory Physiology	Multifactorial Approach for A Multifactorial Condition: Modelling Alzheimer's disease	Total Ergonomic Approach of Prof. Manuaba
13.25 – 13.45	dr. Adrianta Surjadhana, MS, AIF	Dr. Munifatul Izzati, M.Sc	dr. Yosef Purwoko, M.Kes, Sp.PD, K.Ger
	The Role of IAIFI in improving physiology teaching for medical schools in Indonesia	Plant Physiology: Its role for human health and prosperity	Physiological Changes on Geriatric Condition
13.45 - 14.05	Prof. dr. Tri Nur Kristina, M.Kes	dr. Muflihatul Muniroh, M.Si.Med, Ph.D	dr. Endang Ambarwati, Sp.KFR(K)
	Teaching and Learning of Physiology in Faculty of Medicine Diponegoro University	Environmental Toxicology in Plant and Animal and Its Health Impact	Role of Exercise in Clinical Condition
14.05 - 14.25	Discussion		
14.25 - 14.50	Coffee break and Sholat		
14.50 - 16.30	Oral & Poster Presentation 10 paper @10 min	Oral & Poster Presentation 10 paper @10 min	Oral & Poster Presentation 10 paper @10 min
16.30 - 17.00	Closing ceremony & Award announcement		

RUNDOWN FOR ORAL PARALLEL SESSION SIPSAM 2019

DAY 1 (FRIDAY, 12 JULY 2019)									
ORAL SESSION 1									
Topic	Neurophysiology (Room 1)			Exercise Physiology 1 (Room 2)			Stem Cell, Regenerative Medicine, and Drug Discovery (Room 3)		
TIME	CODE	PRESENTER	TITLE	CODE	PRESENTER	TITLE	CODE	PRESENTER	TITLE
15.00 - 15.10	NP-O-001	Anisa Ell Raharyani , Yuriz Bakhtiar, Awal Prasetyo, Suprihati, Hardian	The Effect Of Mindfulness On Pain, Neutrophil, IL- 6 Serum Level In Nasopharyngeal Cancer Grade III And IV	EP-O-001	Ni Luh Kadek Alit Arsani , Wimpie Pangkahila, Bagus Komang Satriyasa	The effect of growth hormone and exercise combination on serum IGF-1 level of perimenopausal wistar rats	ST-O-001	Edwin Widodo , Ajeng Erika, Analis Wisnu Wardhana, Anggit Rospitasari, Bagus Abrianto	Reducing Hypercholesterolemia in Rats (<i>Rattus norvegicus</i>) by Activated Charcoal as indicated on Low Density Lipoprotein (LDL) and Malondialdehyde (MDA) Levels and Histopathology of Jejunum and Duodenum
15.10 - 15.20	NP-O-002	Aris Widayati , Wibi Riawan	Hubungan HMGB1 dan BDNF pada jaringan otak tikus model stroke iskemik	EP-O-002	Donna Novina Kahanjak , Helena Jelita, Ignatia Geovani Johanna Rotinsulu	The effect of isotonic drinking packaging with pure isotonic drinking (coconut water) on saliva pH and muscle endurance during the 30 minute running activity	ST-O-003	Hanna Goenawan , Ronny Lesmana, Alvin Susetyo, Iwan Setiawan, Vita Murniati Tarawan, Yuni Susanti Pratiwi, Nova Sylviana, Titing Nurhayati, Unang Supratman	MyoD and Desmin alteration during murine skeletal muscle cell line (L6) differentiation
15.20 - 15.30	NP-O-003	Hari Purnomo, Danang Setiawan	Evaluation the effect of listening to Quran recitation on workload and driving performance: a car simulator study	EP-O-003	Nova Sylviana , Averina Octaxena Aslani, Hanna Goenawan ,Ronny Lesmana, Setiawan	Effect of Light-, Moderate-, and High-Intensity Exercise on VEGF and CD34+ Gene Expression in Wistar Rat Cardiac Muscle	ST-O-004	Inu Mulyantoro , Oktoria Indrapraja, Widjiati, Noor Pramono	The effect of metformin on ratio bcl-2 / bax expression and wide of endometriosis implants, study of endometriosis model mice
15.30 - 15.40	NP-O-004	Fariz Eka Setiawan , Azka T El Muzakka, M. Thohar Arifin, Aris Catur, Zainal Muttaqin, Yuriz Bakhtiar	A case report : 10 years old boy with hemimegalencephaly	EP-O-004	Yetty Machrina , Dharma Lindarto, Ambrosius Purba, Novita Sari Harahap , Yunita Sari Pane	The Expression of Liver Metabolic Enzyme AMPK α 1, AMPK α 2, and PGC-1 α due to Exercise in Type-2 Diabetes Mellitus Rat Model	ST-O-005	Novita Sari Harahap , Nurhayati Simatupang, Suprayitno	Red Dragon Fruit (<i>Hylocereus Polyrhizus</i>) Prevents The Decrease Of Immunity In Untrained People After Heavy Physical Exercise
15.40 - 15.50	NP-O-005	Yuriz Bakhtiar, Lathifa Putry Fauzia , Adrian Pratama	10-years Neglected Chronic Subdural Hematoma of Pediatric in Rural Area	EP-O-006	Donna Adriani , Minarma Siagian, Dewi Irawati	Combination of aerobic exercise and Hibiscus sabdariffa Linn. Increased superoxide dismutase in rats	ST-O-007	Ronny Lesmana , Hanna Goenawan, Aziiz Mardanarian Rosdianto, Gilang Muhammad, Iwan Setiawan, Prayudi Santoso, Arto Y. Soeroto, Susianti, Vita Murniati Tarawan, Yuni Susanti Pratiwi, Nova Sylviana, Titing Nurhayati and Unang Supratman, Ambrosius Purba	Ethionamide modulates blood biomarker of young and old rats

DAY 1 (FRIDAY, 12 JULY 2019)									
ORAL SESSION 1									
Topic	Neurophysiology (Room 1)			Exercise Physiology 1 (Room 2)			Stem Cell, Regenerative Medicine, and Drug Discovery (Room 3)		
TIME	CODE	PRESENTER	TITLE	CODE	PRESENTER	TITLE	CODE	PRESENTER	TITLE
15.50 - 16.00	NP-O-006	Ratna Indriawati, Tunjung Wibowo	Behaviour disorders due hypoxia ischemic prenatal	EP-O-007	Etika Ratna Noer, Kis Djamiatun, Emy Huriyati, Hardhono Susanto, Fatimah Muis, Kusmiyati Tjahjono, Sulchan Mohammad	High-protein diet and exercise improve inflammatory and oxidative stress markers after weight loss in adolescent obesity: a randomized control trial	ST-O-010	Yuni Susanti Pratiwi, Ronny Lesmana, Hanna Goenawan, Nova Sylviana, Iwan Setiawan, Vita Murniati. Tarawan, Keri Lestari Dandan, Rizky Abdulah, Lazuardhi Dwipa, Ambrosius Purba, Unang Supratman	Nutmeg Extract Alters Mitochondrial Dynamic Regulation and Potentially Initiates Skeletal Muscle Fibers Shifting in Aging Rats
16.00 - 16.10	NP-O-008	Abdullah Faqih, Sinu Andhi Jusup, Nanang Wiyono	Effect of Intermitten Fasting to Working Memory Function after acute stress induction	EP-O-008	Hanna Cakrawati, Minarma Siagian, Neng Tine Kartinah	PHYSICAL EXERCISE AS THERAPY OF OSTEOPENIA IN WISTAR RATS INDUCED BY GLUCOCORTICOID: REVIEW IN THE NUMBER OF OSTEOBLAS AND OSTEOCLAS	ST-O-011	I PUTU YUDA PRABAWA	The Stromal Cell-Derived Factor-1 (SDF-1)/CXCL-12 1-3'A-gene polymorphism is related to the increased risk of coronary artery disease: A systematic review and meta-analysis
16.10 - 16.20	NP-O-009	Tahyatul Bariroh, Neng Tine Kartinah, Sophie Yolanda, Faizah Abdullah Djawas, Diah Ayu Aguspa Dita	Combination of aerobic exercise intensity and duration on spatial memory and expression of Neuroligin-1 in Hippocampal Male Wistar Rats	EP-O-009	Ignatio Rika Haryono, Lyon Clement, Bertha Soegiarto	The Association between Dorsoflexion Talocruralis Joint and the Landing-Quality of College Female Athletes in Atma Jaya School of Medicine	PA-O-004	Retty Ratnawati, Diena Fuadiyah, Rudhanton, Kumala Kurnia Hayu, Ilyas Kurniawan, Inge Mustika Prilia	Peanut shell extract (arachishypogaea l.) Influences osteoblast, osteoclast, and osteocyte in alveolar bone of rattus norvegicus strain wistar induced by Aggregatibacter actinomycetemcomitans
16.20 - 16.30	NP-O-010	Dodik Tugaworo, Aditya Kurnianto, Yoshua Kevin Poonatajaya	Correlation Between Blood Glucose And Low-Density Lipoprotein Level With Pulsatility Index Of Intracranial Arteries Evaluated By Transcranial Colour-Coded Duplex Ultrasonography	EP-O-010	Julia Windi Gunadi, Vita M. Tarawan, Setiawan, Ronny Lesmana,	Different intensity of exercise increases fgf23 gene expression in rat cardiac muscles	AI-O-003	Dian Hasanah, Handono Kalim, Kusworini Handono	The Association of Hyponatremia with Mortality of Systemic Lupus Erythematosus Patients in Saiful Anwar General Hospital Malang Indonesia
16.30 - 16.40	NP-O-011	Nurhadi Ibrahim, Ray Wijaya, Mohammad Reka Ananda Putra, Ninik Mudjihartini	Centella Asiatica Restore Antioxidant Capacity in Brain and Improve Cognitive Function of Mice	EP-O-023	Indika PM, Yuniarti E, Sari PA, Febriyanti	THE EFFECT OF SUBMAXIMAL PHYSICAL TRAINING ALONG WITH VITAMIN C SUPPLEMENT TOWARDS ERYTHROCYTE	M-O-004	Indira Vidiari J, Nila Wahyuni, Luh Made Indah Sri Handari Adiputra	The difference elderly depression levels between yoga group and non yoga group in Denpasar

NP-O-010

Correlation Between Blood Glucose and Low-Density Lipoprotein Level With Pulsatility Index of Intracranial Arteries Evaluated by Transcranial Color-Coded Duplex Ultrasonography

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ABSTRACT

BACKGROUND : *Pulsatility index* (PI) measures the vascular resistance distal to the examined artery. PI of intracranial arteries may predict the future cerebrovascular event. High *blood-glucose* and *low-density lipoprotein* (LDL) level are the known risk factor for atherosclerosis. However, there were few studies which describe the correlation of the two in Indonesia.

OBJECTIVES : To analyze the correlation between plasma *blood-glucose* and *low-density lipoprotein* (LDL) level and PI of intracranial arteries (right and left anterior cerebral arteries, right and left middle cerebral arteries, right and left posterior cerebral arteries, right and left vertebral arteries, and basilar artery) examined by *transcranial color-coded duplex ultrasonography* (TCCD)

METHOD : This study is a Cross Sectional Study Design in dr Kariadi Hospital within Januari until December 2018. Fourty-eight patients (n = 48) who underwent a TCCD examination were tested for blood-glucose and LDL level. Normality of the data were tested using *Saphiro wilk*, then the correlation tested using *Spearman's rank correlation test*.

RESULTS : There were significant correlation between both blood-glucose or LDL level with PI of intracranial arteries (all p < 0.05).

CONCLUSIONS : blood glucose and LDL level is associated with PI of intracranial arteries.

Keywords : *blood-glucose, low density lipoprotein, pulsatility index, vascular resistance, ischemic stroke.*

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