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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Judul Artikel Ilmiah	:	**Effect of zinc and vitamin A supplementation on immune responses in Indonesian pre-schoolers**
Nama semua penulis	:	Martha Irene Kartasurya, Geoffrey C Marks, Faruk Ahmed, Hertanto W Subagio, **Mohammad Zen Rahfiludin**
Status Pengusul (coret yg tidak perlu)	:	~~Penulis Utama/~~ ~~Penulis Utama & Korespondensi~~ ~~/ Penulis Korespondensi/~~ **Penulis Anggota**

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⎩ Edisi (bulan, tahun)	:	Desember 2020
⎩ ISSN	:	e-ISSN 1440-6047, p-ISSN 0964-7058
⎩ DOI	:	https://doi.org/10.6133/apjcn.202012_29(4).0008
⎩ Alamat WEB Jurnal	:	https://pubmed.ncbi.nlm.nih.gov/33377367/
⎩ Terindex di	:	Scopus Q3 SJR 2019 = 0,442

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c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	11	11	11
d. Kelengkapan unsur dan kualitas penerbit (30%)	11	12	11,5
Total = (100%)	37	39	**38**
Nilai pengusul = 40% x 38 = 15,2 / 4 = 3,8			

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Reviewer 2

Prof. Dr. Merryana Adriani, S.KM., M.Kes
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	Nilai Total	**40**	37
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Catatan Penilaian artikel oleh Reviewer

a	Kelengkapan unsur isi artikel	Unsur artikel lengkap, telah memenuhi kaidah penulisan artikel ilmiah dalam jurnal
b	Ruang lingkup & kedalaman pembahasan	Artikel ini membahas tentang efek Zinc dan suplementasi vitamin A terhadap respon imun pada anak prasekolah di Indonesia. Pembahasan cukup mendalam didukung referensi yang relevan
c	Kecukupan dan kemutahiran data/informasi dan metodologi	Data mutakhir, variabel yang diamati dapat menggambarkan dan menjelaskan tujuan yang ingin dicapai
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Surabaya, 29 Januari 2020
Reviewer 1

Prof. Dr. Sri Sumarmi, S.KM., M.Si
NIP 196806251992932002
Unit kerja: Fakultas Kesehatan Masyarakat Universitas Airlangga

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d	Kelengkapan unsur dan kualitas jurnal (30%)	12	12
	Nilai Total	**40**	39
	Nilai yang didapat pengusul: 40% x 39 = 15,6 / 4 = 3,9		

Catatan Penilaian artikel oleh Reviewer

a	Kelengkapan unsur isi artikel	Telah sesuai dengan "Guide for Author" substansi artikel telah sesuai dengan bidang ilmu pengusul yaitu ilmu gizi kesehatan masyarakat
b	Ruang lingkup & kedalaman pembahasan	Substansi artikel telah sesuai dengan ruang lingkup jurnal "Asia Pacific Journal of Clinical Nutrition" kedalaman pembahasan telah melibatkan cukup rujukan yaitu 54 rujukan untuk melakukan analisis yang tertuang dalam pembahasanny. Pembahasan mendalam didukung referensi yang relevan.

c	Kecukupan dan kemutahiran data/informasi dan metodologi	Data hasil penelitian menunjukkan kebaruan informasi sehingga dapat ditarik kesimpulan yang dapat dipertanggung jawabkan
d	Kelengkapan unsur dan kualitas jurnal	Asia Pacific Journal of Clinical Nutrition adalah jurnal internasional bereputasi diterbitkan oleh HEC Press, Q3 SJR 0,442 dengan citation 1.370

Surabaya 29 Januari 2020
Reviewer 2

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Unit kerja : Fakultas Kesehatan Masyarakat Universitas Airlangga

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Asia Pacific journal of clinical nutrition
Volume 29, Issue 4, 2020, Pages 732-742

Effect of zinc and vitamin A supplementation on immune responses in Indonesian pre-schoolers (Article)

Kartasurya, M.I.[a], Marks, G.C.[b], Ahmed, F.[c], Subagio, H.W.[d], Rahfiludin, M.Z.[e]

[a]Public Health Nutrition Department, Faculty of Public Health, Diponegoro University, Semarang, Indonesia. Email: ; marthakartasurya@lecturer.undip.ac.id
[b]School of Public Health, University of Queensland, Brisbane, QLD, Australia
[c]Public Health, School of Medicine, Griffith University, Gold Coast, QLD, Australia

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Abstract

BACKGROUND AND OBJECTIVES: Vitamin A and zinc are interrelated, but the effects of zinc on vitamin A supplementation on morbidity are inconsistent and not well understood. We investigated the effects of zinc and vitamin A supplementation on immune responses in Indonesian pre-schoolers. METHODS AND STUDY DESIGN: In a twostage study design, 826 children (2-5year old) were randomly assigned to receive daily zinc supplement (10 mg) or placebo for 4 months. At 2 months, both groups received a 200,000 IU vitamin A capsules through national vitamin A program. Data were collected at baseline, two and four months, resulting in 4 groups for comparisons: - no zinc no vitamin A (Placebo), zinc only, vitamin A only, and zinc plus vitamin A . Hair, blood and saliva samples were collected to measure hair zinc and serum retinol (vitamin A) concentration, ex-vivo IFN-γ, serum IgG and salivary IgA from 81 children selected randomly from each group. RESULTS: At baseline, there were no differences between treatment groups. Zinc supplementation increased ex-vivo IFN-γ production, greatest amongst boys, younger (<3.5 years), normal weight and children with low baseline retinol concentration. Vitamin A supplementation increased IFN-γ only in those with low baseline retinol, with no effect on serum IgG and salivary IgA. After vitamin A supplementation , zinc had an effect on salivary IgA among younger and underweight children. CONCLUSIONS: Zinc supplementation increased IFN-γ (cellular immune responses) and modified the effect of vitamin A supplementation on salivary IgA (mucosal innate immune response) in younger and underweight children.

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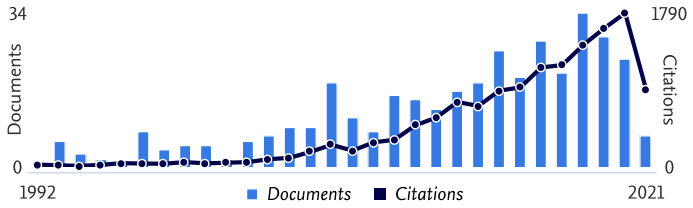

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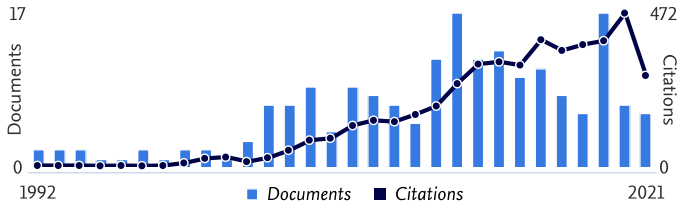

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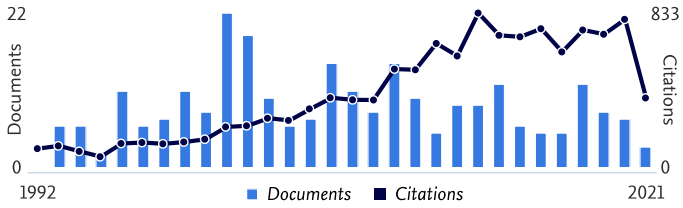

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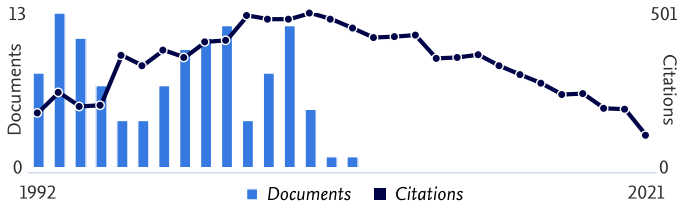

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Asia Pacific Journal of Clinical Nutrition
Volume 29, 4
(December 2020)

Abstracts

Review Article

Econutrition, brown and beige fat tissue and obesity

Kelei Li PhD[1], Chunxiao Liu MM[1], Mark L Wahlqvist MD[1,2,3,4], Duo Li PhD[1,5,6]

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Background and Objectives: Obesity is caused by excessive fat accumulation or abnormal fat distribution and has become one of the biggest health challenges worldwide. Considering the high thermogenic ability of brown fat tissue (BAT) and the plasticity of fat tissue, to induce the browning of white fat tissue (WAT), so increasing BAT activity provides an attractive option for the prevention and resolution of obesity. The aim of the present narrative review was to understand the relationship between diet, BAT, and obesity. **Methods and Study Design:** PubMed and Embase databases were searched to identify eligible studies. **Results:** Although cold exposure has long been known to be effective in the browning of WAT and activation of BAT, it is societally impractical for everyday body weight management aside from the tolerance of ambient temperature. An alternative is to identify specific dietary components with similar effects to cold exposure on BAT. Current evidence indicates that capsaicin and capsinoids, catechins, curcumin, quercetin, berberine, lipoic acid, polyunsaturated fatty acids, royal jelly, and some natural sweeteners are effective promoters of WAT browning, increase BAT activity and improve obesity related traits. However, only capsaicin, capsinoids, and catechins have demonstrated efficacy in clinical trials. Evidence for effects of curcumin, quercetin, berberine, lipoic acid, polyunsaturated fatty acids, royal jelly and natural sweeteners on BAT have only been observed in animal or in vitro studies, with clinical trials awaited for verification. **Conclusions:** Several dietary components can induce WAT browning and activate BAT, offering potential targets for obesity prevention and management.

Key Words: diet, brown fat tissue, energy metabolism, obesity, overweight

INTRODUCTION

Obesity is a chronic metabolic disease, caused by excessive fat accumulation or abnormal fat distribution. When the body intakes more energy than it consumes, excess energy will be stored in the form of fat, eventually leading to obesity. Obesity has become one of the biggest health challenges worldwide and is associated with many disorders and diseases, such as metabolic syndromes, hypertension, type 2 diabetes mellitus, cardiovascular disease, some cancers, neurodegenerative diseases and problems with mental health.[1,2] In 2010, it was estimated that global overweight and obesity resulted in 3.4 million deaths.[3]

Adipose tissue types are referred to as white adipose tissue (WAT) and brown adipose tissue (BAT). White fat that undergoes browning in response to environmental and physiological stimuli is referred to as beige fat.[4-6] White fat can store excess food energy in the form of triglycerides, while brown fat is a specialized thermogenic organ that can burn energy mainly through the oxidation of lipids (and possibly glucose) coming from blood to generate heat, which is necessary for mammals to maintain body temperature in the cold.[6,7] The intake of certain dietary components[8] or specific diets[9] can lead to browning of WAT. Therefore, brown fat activation through diet might be an attractive target in the prevention and therapy of obesity.[10] The present study systematically reviews recent evidence for relationships between diet, BAT, and obesity.

Brown adipose tissue

BAT is formed by multilocular brown adipocytes, and mainly distributed in intrascapular, axillae, paravertebral, and perirenal regions in humans.4 It is present in rodents throughout life, but in humans is found mainly in newborns and degenerates with age.[4,11] An autopsy study confirmed the presence of BAT in young adults but not the elderly.[12] BAT is a main thermogenic site in mammals. It is estimated that the heat produced by BAT is up to 300 times of that produced by most other tissues of the same weight.[13] It contains a large number of mitochondria enriched in uncoupling protein 1 (UCP1) and has a relative-

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Manuscript received 25 August 2020. Initial review completed 03 September 2020. Revision accepted 21 September 2020.
doi: 10.6133/apjcn.202012_29(4).0001

Original Article

Weight and cardiometabolic risk among adolescents in Agano city, Japan: NICE EVIDENCE Study-Agano 1

Sakiko Yoshizawa Morikawa RD, PhD[1,2], Kazuya Fujihara MD, PhD[2], Yasunaga Takeda RD, MSc[2], Mariko Hatta RD, PhD[2], Chika Horikawa RD, PhD[2,3], Masahiro Ishizawa MD[2], Masahiko Yamamoto MD, PhD[2], Tomonobu Shiraishi MD[2], Hajime Ishiguro MD, PhD[2], Takaho Yamada MD, PhD[2], Yohei Ogawa MD, PhD[4], Hirohito Sone MD, PhD, FACP[2]

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Background and Objectives: Pediatric obesity is associated with clustered cardiometabolic risk and the future incidence of cardiovascular disease. However, few studies have determined the effect of pediatric obesity in Asia, where obesity is less common than in Western countries. We aimed to clarify whether weight status including underweight and slightly overweight is associated with metabolic risk factors in Japanese adolescents. **Methods and Study Design:** We performed a cross-sectional analysis of 2241 adolescents aged 13–14 years. Participants were classified as underweight, normal weight, slightly overweight, overweight, or obese according to the International Obesity Task Force. The clustered cardiometabolic risk (Z-CMR) was estimated by summing standardized sex-specific Z scores of mean arterial pressure (MAP), non-high-density lipoprotein cholesterol (non-HDL-C), and HbA1c. **Results:** Linear regression analysis showed that MAP, non-HDL-C, and Z-CMR were higher in the slightly overweight, overweight, and obese groups than in the normal weight group after adjusting for confounders. Compared with the normal weight group, the slightly overweight, overweight, and obese groups had higher prevalence of high BP [odds ratios (ORs): 1.38 (95% CI, 1.03, 1.85); 2.63 (1.77, 3.91); and 2.39 (1.57, 3.64), respectively]. Compared with the normal weight group, underweight boys, but not girls, had a lower prevalence of high Z-CMR [OR=0.20 (0.05, 0.84)]. **Conclusions:** Adolescents classified as slightly overweight had higher levels of BP, serum lipids, and clustered cardiometabolic risk than those classified as normal weight. This observation showed significant associations between weight status and cardiometabolic risk factors during adolescence even in East Asians.

Key Words: overweight, underweight, blood pressure, lipids, glycated hemoglobin A1c

INTRODUCTION

The prevalence of pediatric obesity has dramatically increased ten-fold during the last four decades.[1] Evidence has shown that overweight or obese children are at high risk for metabolic abnormalities[2] and atherosclerosis[3] even in early life; moreover, an unfavorable metabolic profile tends to persist from youth to adulthood.[4] Therefore, screening of and interventions for high-risk children are essential for primary prevention of cardiovascular disease (CVD).

Recently, the American Academy of Pediatrics[5] recommended focusing on screening for associated individual risk factors (e.g., elevated blood pressure, decreased high-density lipoprotein, and hyperglycemia) and assessing cardiometabolic risk (CMR) clustering (defined as a continuous risk score computed from components of metabolic syndrome (MetS) or the presence of multiple risk factors) rather than using cutoff points based on MetS definitions. CMR clustering has a tendency to persist from childhood to adulthood;[4] moreover, recent studies revealed that the score for CMR clustering in youth is associated with long-term risk for type 2 diabetes[6] and CVD.[7]

Pediatric studies conducted in Western countries showed that an increasing degree of obesity (categorized by body mass index (BMI)) was associated with a high level of individual risk factors[8,9] and worse scores on CMR clustering.[10] However, in Asian pediatric popula-

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