

Medical perspective : The Benefits of Yoga for Young Children's Development (Evidence Based Medicine)

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CHILD DEVELOPMENT



“Perkembangan sosial dan emosi anak yang sehat adalah fondasi untuk mendukung domain perkembangan anak lainnya”

American Association of Pediatric

KENAPA??

Anak lari, lompat,
menulis, naik
sepeda

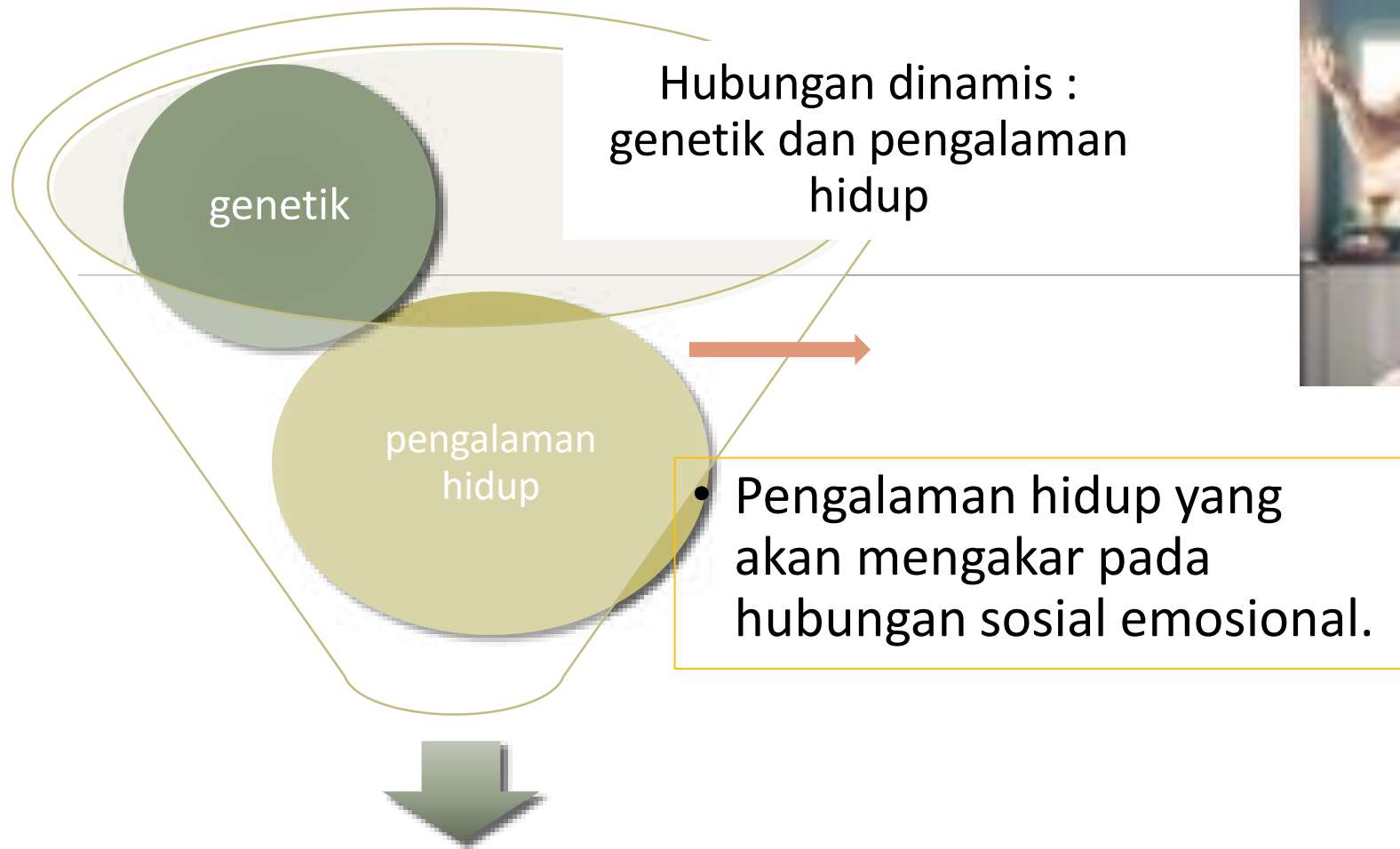
Dengan keluarga, teman,
orang lain (orang lebih
tua, lebih muda)

Anak belajar
komunikasi
(bahasa), berfikir,
problem solving

Anak belajar
bermain

Hubungan sosial – peran
emosi : kasih sayang,
senang, sedih, marah,
kecewa





Tumbuh kembang anak



3 kelompok utama temperamen anak

Temperament refers to a child's behavioral style, or the "how" of behavior.
Temperamen : pola perilaku anak. → Tidak bisa di ubah, tetapi bisa di akomodasi

40% anak-anak : "easy" temperament

- positif respon situasi baru, adaptasi sangat baik, cenderung mood positif .

10% anak-anak : "difficult" temperament

- negatif respon pada situasi baru, sulit/lambat beradaptasi pada perubahan, cenderung negatif mood.

15% anak-anak: "slow to warm up"

- tipe kombinasi, adaptasi yang lumayan baik setelah paparan berulang. Cenderung anak yang pendiam dan positif.

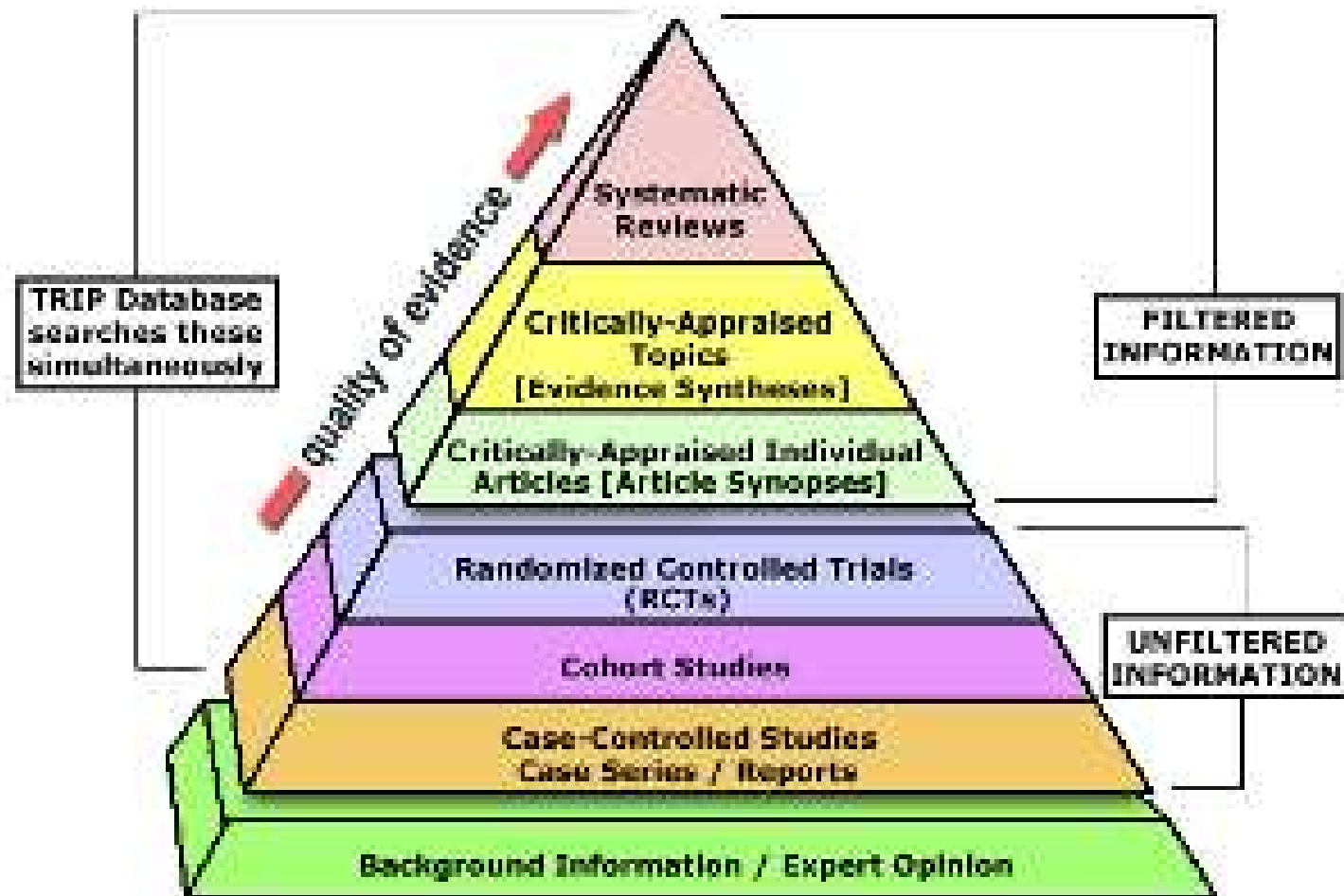
Temperament cannot be changed, but it can be accommodated.
Ditentukan "goodness of fit" : interaksi orang tua / pengasuh -anak.



Area “Sosial and emotional” pada otak anak berkembang lebih cepat dibandingkan area kognitif dan bahasa.

Tahap perkembangan sosial emosional : eksplorasi-mendapatkan pengalaman, regulasi emosi, membangun hubungan yang aman-nyaman.

Berpengaruh untuk menciptakan regulasi emosi dan regulasi stress yang dapat bertahan seumur hidup.



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1-1720 Results

☐ CLINICAL TRIAL

A Controlled Trial of Yoga in Pediatric Inflammatory Bowel Disease (IBD)

Published January 20, 2020. Conclusions: Inflammatory Bowel Disease (IBD) is a chronic inflammatory condition of the gastrointestinal tract. Yoga is a mind-body practice that has been shown to have beneficial effects on IBD.

☐ CLINICAL TRIAL

Yoga for Pediatric Tension-Type Headache

Published May 2, 2017. Conclusions: Headaches are a common problem in children and adolescents. Yoga is a mind-body practice that has been shown to have beneficial effects on headaches.

1-1720 Results

☐ FULL TEXT ARTICLE

Using Yoga to Reduce Anxiety in Children: Exploring School-Based Yoga Among Rural...

Abstract: Purpose: Children's anxiety is a common problem. Yoga is a mind-body practice that has been shown to have beneficial effects on anxiety.

Journal of Pediatric Health Care

Shree, Mallik, PhD, RN, CNRN, Scott, K. PhD, J. Shree, S. PhD

A Study of Yoga and Concentration

J. Thomas Hopkins, Laura J. Hopkins

First Published January 1, 1979 | Research Article

<https://doi.org/10.1177/105345127901400312>

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A STUDY OF YOGA AND CONCENTRATION

Yoga and physical exercise – a review and comparison

Ramajayam Govindaraj, Sneha Karmani, Shivarama Varambally and B.N. Gangadhar

NIMHANS Integrated Centre for Yoga, Department of Psychiatry, National Institute of Mental Health and Neurosciences, Bangalore, India

Origin and intention

Yoga

The very meaning of the word yoga (controlling the mental modifications; communion with the universal) (Iyengar, 2007) signifies the importance it attaches to mental and spiritual well-being, stretching beyond just physical well-being. Though the practice of yoga was in existence from the pre-vedic period, it was around

Yama, Niyama- Behavioural level
Asana, Pranayama-Physical level
Pratyahara, Dharana- Mental level
Dhyana, Samadhi - Spiritual level

The Eight Limbs of Yoga



Yoga and physical exercise – a review and comparison

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ABSTRACT:

Yoga is a multifaceted spiritual tool with enhanced health and well-being as one of its positive effects. The components of yoga which are very commonly applied for health benefits are *asanas* (physical postures), *pranayama* (regulated breathing) and meditation. In the context of *asanas*, yoga resembles more of a physical exercise, which may lead to the perception that yoga is another kind of physical exercise. This article aims at exploring the commonalities and differences between yoga and physical exercise in terms of concepts, possible mechanisms and effectiveness for health benefits. A narrative review is undertaken based on traditional and contemporary literature for yoga, along with scientific articles available on yoga and exercise including head-to-head comparative trials with healthy volunteers and patients with various disease conditions. Physical exercises and the physical components of yoga practices have several similarities, but also important differences. Evidence suggests that yoga interventions appear to be equal and/or superior to exercise in most outcome measures. Emphasis on breath regulation, mindfulness during practice, and importance given to maintenance of postures are some of the elements which differentiate yoga practices from physical exercises.

FULL TEXT ARTICLE

Potential benefits of yoga in patients with heart failure: A meta-analysis of controlled trials



ClinicalKey®

Luis Mückel

European Journal of Integrative Medicine, 2019-10-01, Volume 31, Article 100948, Copyright © 2019 Elsevier GmbH

Overview of Common Complementary and Integrative Approaches to Managing Chronic Pain: A Guide for Patients With Chronic Pain

Shilpa Krishnan PT, PhD, Dustin Anderson MD, Sophia Chan DPT, LAc, Sonya Kim CRC, PhD, Timothy

FULL TEXT ARTICLE

The benefits of yoga practice compared to physical exercise in the management of type 2 Diabetes Mellitus: A systematic review and meta-analysis

Ranil Jayawardena, Priyanga Ranasinghe, Tharindu Chathuranga, Piyusha Miani Atapattu and Anoop Misra

FULL TEXT ARTICLE

The benefits of yoga for people living with HIV/AIDS: A systematic review and meta-analysis

Eugene M. Dunne, Brittany L. Balletto, Marissa L. Donahue, Melissa M. Feulner, Julie DeCosta, Dean G.

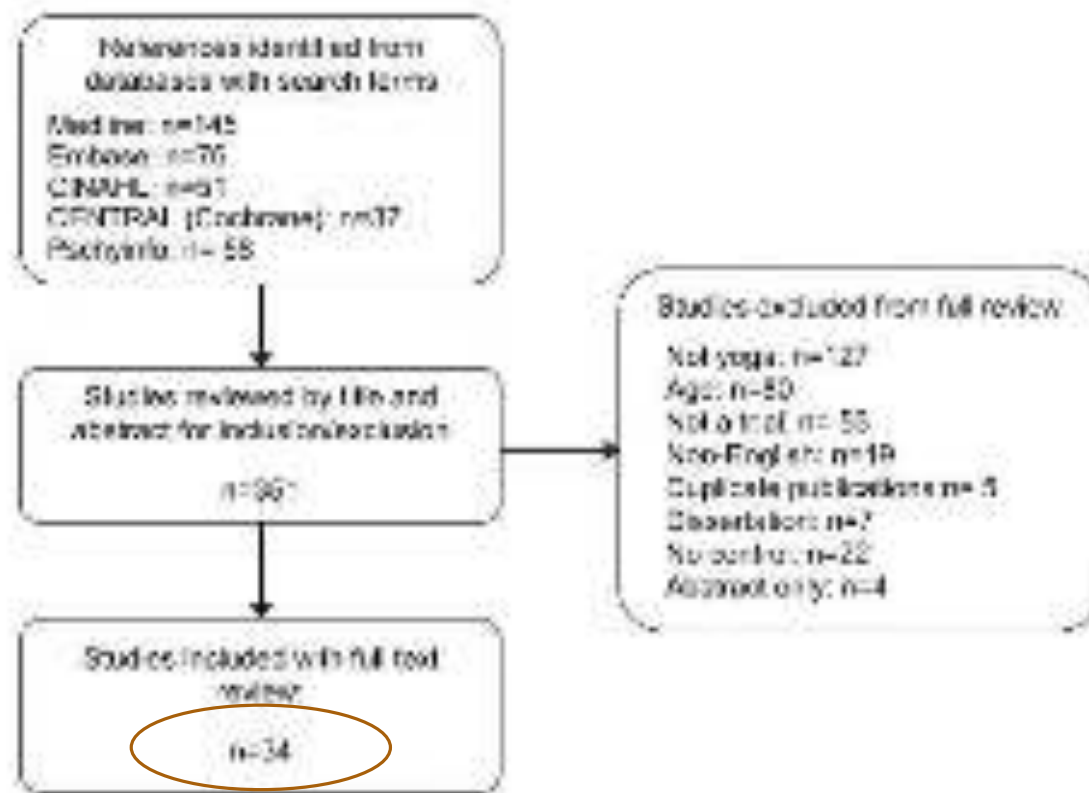


Clinical Applications of Yoga for the Pediatric Population: A Systematic Review

Gurjeet S. Birdee MD, MPH, Gloria Y. Yeh MD, MPH, Peter M. Wayne PhD, Russell S. Phillips MD, Roger B. Davis ScD and Paula Gardiner MD, MPH

Academic Pediatrics. 2009-07-01, Volume 9, Issue 4, Pages 212-220.e9, Copyright © 2009 Academic Pediatric Association

Results.—Thirty-four controlled studies published from 1979 to 2008 were identified, with 19 RCTs and 15 NRCTs. Many studies were of low methodological quality. Clinical areas for which yoga has been studied include physical fitness, cardiorespiratory effects, motor skills/strength, mental health and psychological





Results.—Thirty-four controlled studies published from 1979 to 2008 were identified, with 19 RCTs and 15 NRCTs. Many studies were of low methodological quality. Clinical areas for which yoga has been studied include physical fitness, cardiorespiratory effects, motor skills/strength, mental health and psychological disorders, behavior and development, irritable bowel syndrome, and birth outcomes following prenatal yoga. No adverse events were reported in trials reviewed. Although a large majority of studies were positive, methodological limitations such as randomization methods, withdrawal/dropouts, and details of yoga intervention preclude conclusive evidence.



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Keywords

1. Introduction

2. Yoga as meditative movement

3. Methods

4. Results



Journal of Integrative Medicine

Volume 18, Issue 1, January 2018, Pages 14–19



Article

The benefits of yoga in children

Chyvela Nanthakumar ⁸¹

8 studi

4 studi randomized controlled trial (penelitian acak terkendali)

4 studi non-randomized controlled trial (penelitian acak tidak terkendali)

No	Subjek Penelitian	Intervensi	Hasil
1	Kelas : 4-5, 92 anak Usia rata2 : 9-10 th	4 x 45 min of yoga, for 12 weeks (48 yoga sessions in total) YG: Asanas, breathing techniques, and guided mindfulness	- Involuntary stress levels dropped - significant reduction in rumination and depression
2	Kelas : 11-12, 51 anak Usia rata2 : 16-17 th	2–3 sessions per week for 10 weeks (28 sessions in total) YG: asanas, breathing, deep relaxation, and meditation	Negative affect improved in YG, but worsened in the CG; YG showed greater mindfulness compared to the CG
3	Kelas : 6, 30 anak Usia rata2 : 10-11 th	3 x 50 min a week for 15 weeks (45 yoga sessions in total) YG: awareness practice, breathing, asanas, vinyasa, meditation, and shavasana; CG: did PE (soccer, volleyball and indoor walking)	No significant difference between the YG and CG for the stress reactivity
4	Kelas : 9-10, 78 anak Usia rata-rata : 15-16	2-3 x 30 min of yoga, for 12 weeks (32 yoga sessions in total) YG : asanas breathing techniques, deep relaxation, and meditation; CG: PE	Improvement in mental health especially in stress regulation

No	Subjek Penelitian	Intervensi	Hasil
5	Kelas : 3, 21 anak Usia rata-rata : 7 -8 th	45-minute yoga sessions per week plus 15-minute yoga sessions for remaining 4 d in a week over a duration of 8 weeks Yoga: asanas, breathing, meditation	Able to control their behavior (anger) in stressful situations; improved self-esteem
6	Kelas : 2-3, 36 anak Usia rata-rata : 7-8 th	Yoga for classrooms (Y4C): pranayama, asanas, meditation techniques and relaxation Duration: 0.5 h per session for 10 weeks	The 2nd graders showed significant drop in cortisol levels ; better able to deal with stress/anxiety . The 2nd and 3rd graders showed improvement in behavior and ability to control anger
7	Kelas : 5-12 74 anak	One to two yoga session per week over 1 year	A reduction in stress levels and increased self-regulation
8	Kelas : 9-10, 47 anak Usia rata-rata :15-16 tahun	5 x 35-minute yoga lessons per week for 3 weeks followed by five 35-minute lessons of PE for one week	Moods improved after the intervention of YG and PE; the YG experienced greater improvement in mood

Yoga as an Alternative and Complementary Approach for Stress Management: A Systematic Review

Manoj Sharma, MBBS, MCHES, PhD, FAAHB¹

Journal of Evidence-Based
Complementary & Alternative Medicine
2014, Vol. 19(1) 28–47
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A systematic review of randomised control trials on the effects of yoga on stress measures and mood



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^a Institute of Neuroscience and Physiology, Dept. of Clinical Neuroscience and Rehabilitation, Sahlgrenska Academy at University of Gothenburg, Sweden

^b University of Texas Health Science Center, Department of Psychiatry and Behavioral Science, Houston, TX, USA

Effect of mindfulness and yoga on quality of life for elementary school students and teachers: results of a randomized controlled school-based study

This article was published in the following Dove Press journal:
Psychology Research and Behavior Management

FULL TEXT ARTICLE

Using Yoga to Reduce Anxiety in Children: Exploring School-Based Yoga Among Rural Third- and Fourth-Grade Students

Article in Press: Corrected Proof

Marlou Shreve DNP, RN, CPNP, Allison Scott DNP, RN, CPNP, IBCLC, Charleen McNeill PhD, RN and Lisa Washburn DrPH

Journal of Pediatric Health Care, Copyright © 2020 National Association of Pediatric Nurse Practitioners

10-Minute Yoga Routine

Routine 1 from School-based Yoga Study

Mountain		Stand tall with feet hip-width apart. Tuck shoulders down and back away from ears. Hold for 3–5 breaths.
Tree		Exhale. Shift weight to right leg. Place left foot inside right leg. Avoid placing the foot on the knee. Inhale. Raise arms overhead. Hold for 3 breaths.
Warrior I		Exhale. Step back with left foot, and arrow the heel into the floor. Stand right knee and stretch over ankle. Raise arms overhead. Hold for 3 breaths.
Warrior II		Keep right knee bent and stacked over ankle. Inhale. Turn left toes out and heel in. Lower arms to parallel to the floor. Hold for 3 breaths.
Mountain		Exhale. Step left foot forward into Mountain Pose. Hold for 1 inhale.

Plank		Inhale. Walk back with both feet until body is in a straight line. Pull belly button in toward spine to tighten abdominals. Hold for 3 breaths.
Down Dog		Exhale. Lift hips up and back until body is in an upside down "V." Keep head in line with spine. Legs straight with slight bend in knees, press heels toward floor. Hold for 3 breaths.
Child's Pose		Exhale. Lower knees to the floor. Bottom on feet, torso on thighs, and forehead on floor. Hold for 3 breaths.
Half Boat		Inhale. Sit up with back straight, knees bent, and feet flat on the floor. Exhale. Balance on tailbone and lift legs off the floor. Hold for 3 breaths.
Lying Twist		Lower feet to floor and lay on back. Keep knees bent and stretch arms to a "T." Exhale. Lower knees to the right and turn head to the left. Hold for 3 breaths. Inhale. Return to center. Exhale lower knees to the left and turn head to the right. Hold for 3 breaths. Inhale. Return to center.
Chill		Stretch legs out straight on the floor. Arms at sides, palms up. Guided Relaxation 1–3 minutes.

Effects of yogic practices on individual organ systems

Mechanism of action of Yogic techniques

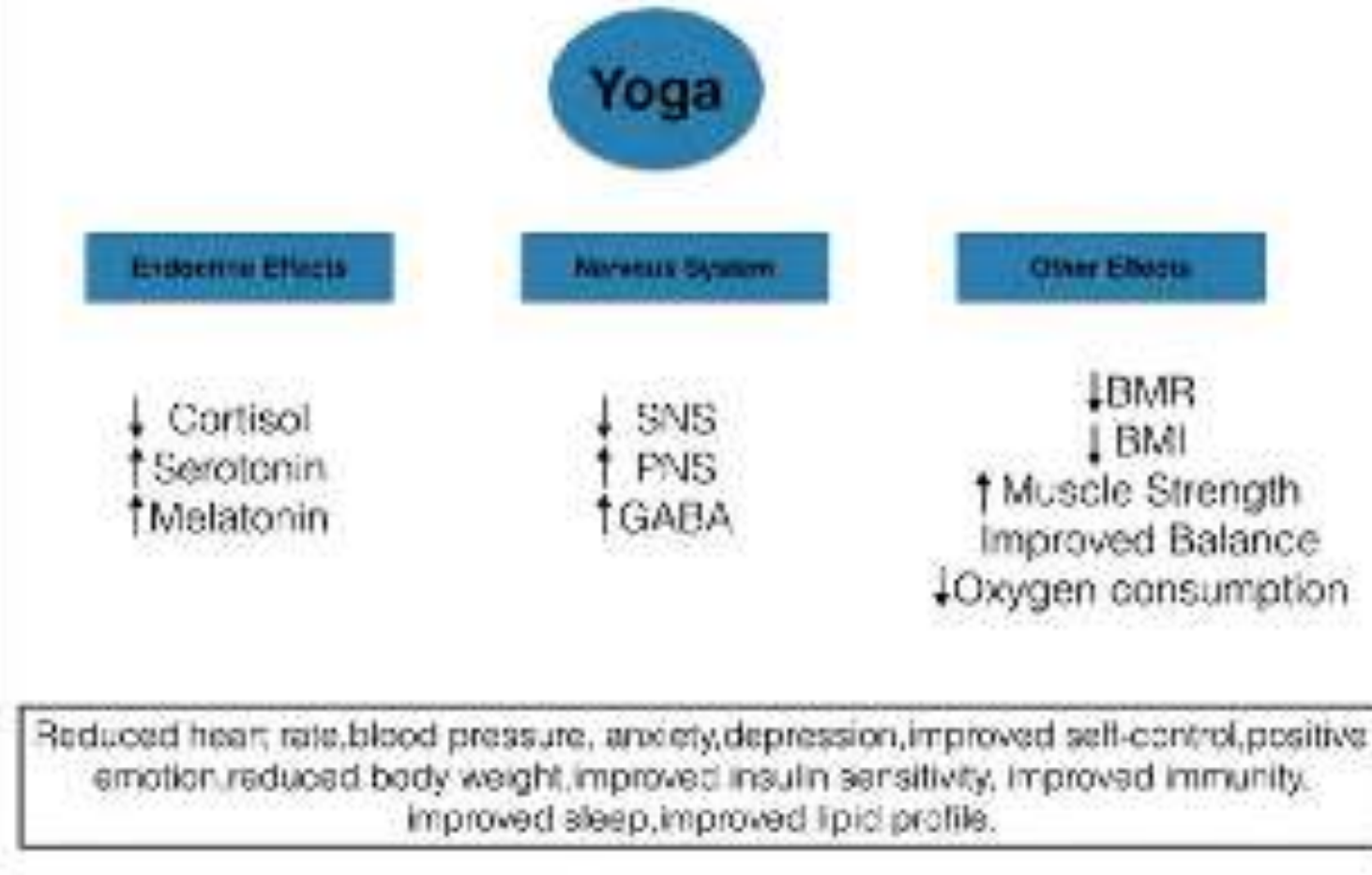
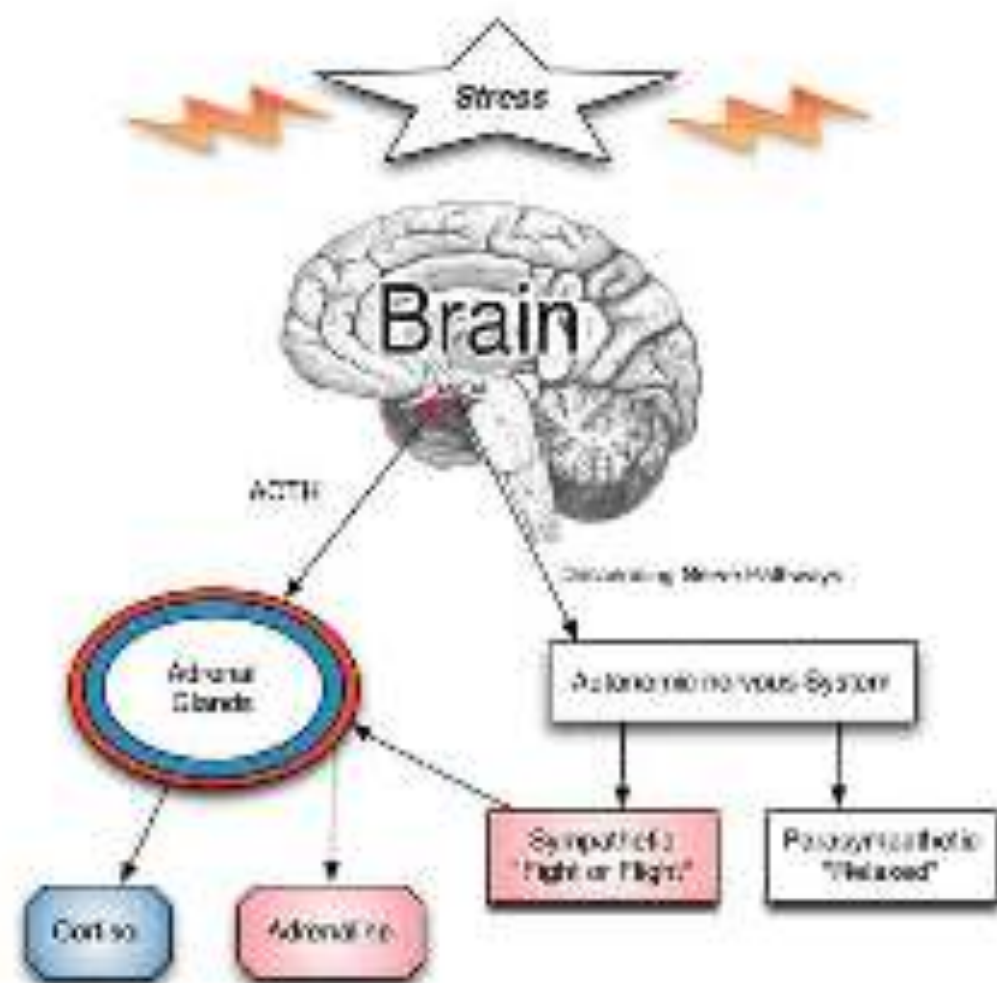


Figure 2: Proposed mechanisms by which the different yogic practices influence the body based on available evidence. BMI body mass index, BMR basal metabolic rate, GABA gamma amino butyric acid, PNS parasympathetic nervous system, SNS sympathetic nervous system



A mindful yoga intervention for children with severe asthma: A pilot study

Sharon Lack PhD, RN, Michael S. Schechter MD, MPH, Robin S. Everhard PhD, Leroy R. Thacker II PhD, Theresa Swift-Scanlan PhD, RN, FAAN and Patricia A. Kinsor PhD, WHNP-BC, RN, FAAN

Complementary Therapies in Clinical Practice, 2016(40-41), Volume 41, Article 101212. Copyright © 2016 Elsevier Ltd



CLINICAL TRIAL

The Effects of Yoga on Attention, Impulsivity and Hyperactivity in Pre-school Age Children With ADHD Symptoms

First received on December 23, 2015. Last updated on May 24, 2017.

The effects of yoga practice on balance, strength, coordination and flexibility in healthy children aged 10–12 years

A pilot study of yoga treatment in children with functional abdominal pain and irritable bowel syndrome

Marion M.M.G. Brands, Helen Furberhart and Judith M. Deckers-Rocken

Complementary Therapies in Medicine, 2011(25-27), Volume 19, Issue 3, Pages 109-114. Copyright © 2011 Elsevier Ltd

Common Causes of Stress for Children:

- New siblings
- Moving
- Starting school/childcare
- Family illness or death
- Divorce
- New stage of development (adolescence)
- Over involvement
- Academics

- Unfamiliar situations
- Change in routine

Not all of these stressors will effect every child. Children handle their reactions to stress differently. Some children have natural abilities to cope with stress, while others need guidance and to build healthy coping skills.

SOURCES OF STRESS BY AGE

Questions asked parents appear in red;
questions asked children appear in blue.

	Total N=226	Parents 8-12 (91)	13-17 134	Total 1,206	Youth 8-12 526	13-17 679
Managing school pressures/ responsibilities/ homework/ grades/Doing well in school	34%	31%	36%	44%	44%	23%
Relationships with siblings/ Getting along with my brother/sister or siblings	17%	17%	16%	8%	14%	2%
Relationships with peers/ Getting along with my friends	20%	20%	20%	18%	22%	11%
Your family's financial difficulties/ My family having enough money	18%	20%	17%	36%	23%	31%
His/her physical appearance/weight/ The way I look/my weight	17%	17%	17%	22%	17%	26%
Your relationship with your spouse/partner/ My parents/guardian or other family members arguing or fighting more	12%	10%	9%	10%	14%	7%
Pressures managing extracurricular commitments (e.g., sports, hobbies)/Managing activities such as sports, music, clubs, etc.	12%	12%	12%	10%	7%	12%
Peer pressure to engage in risky behaviors (e.g., smoking, drinking, drugs, sex, etc.)/Pressure from friends who want me to try smoking, drinking, drugs, sex, etc.	6%	1%	10%	3%	-	2%
Getting into a good college/determining future/Getting into a good college/Deciding what to do after high school	5%	1%	5%	12%	5%	20%
Non-financial pressures on family members (e.g., health, job frustrations, getting along with extended family, etc.)	3%	2%	4%	N/A	N/A	N/A
Getting along with my boyfriend or girlfriend	N/A	N/A	N/A	3%	1%	4%
My parent(s)/guardian losing their jobs	N/A	N/A	N/A	8%	7%	5%
Other	8%	10%	6%	10%	12%	8%

Chronic stress is the leading cause of substance abuse and depression which are strongest risk factors of suicide.



School is the leading source of stress for teens.

1/3 of teens think they do not do enough to manage their stress.

Stress in Teens

17 year olds experience stress levels higher than what they consider to be healthy.

UCLA
found

41 percent of incoming class felt overwhelmed, growing from 23 percent in 2010.

Kesimpulan

1. “Perkembangan sosial dan emosi anak yang sehat adalah fondasi untuk mendukung domain perkembangan anak lainnya” → puncaknya terjadi usia 18 bulan
2. Komponen yoga yang secara luas digunakan dalam manfaatnya secara medis adalah *Asanas (physical posture)* dan *pranayama (regulated breathing)* dan juga meditasi
3. Efek yoga pada sistem organ : sistem endokrin, sistem syaraf, kardiovaskular dan muskuloskeletal
4. Penelitian yoga pada anak telah banyak dilakukan sekitar 41 tahun dan dilakukan sampai dengan systematic review dengan hasil : menunjukkan manfaat pada irritable bowel disease, functional abdominal pain, tension type headache, ADHD, Autisme, anxiety, regulasi stress
5. Stressor pada anak bermacam macam dan stressor berkepanjangan dapat berakibat negatif pada anak