Sleep and Wellness:
an Evidence-based Discussion

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Sleep

- is not a waste of time….
- Cleans the brain (Xie et al, 2013)
- helps children grow (Takahashi et al, 1968)
- helps you keep normal appetite (Shahrad et al, 2004)
- helps your memory and learning (Rasch and Born, 2013)
- Keeps you calm (Moturu et al, 2011; Tempesta et al, 2018)
- …

Sleep and Wellness

- Losing 90 minutes of sleep reduces day time alertness by nearly 1/3 (Breus, 2006)
- People who slept only 4 hours are 3 times more likely to get the flu (Cohen et al, 2010)
- Health, productivity, wellness, quality of life, and safety on roads and in the workplace

Some works we have done related to sleep and wellness

Psychoneuroendocrinology (2013) 38, 2337—2342

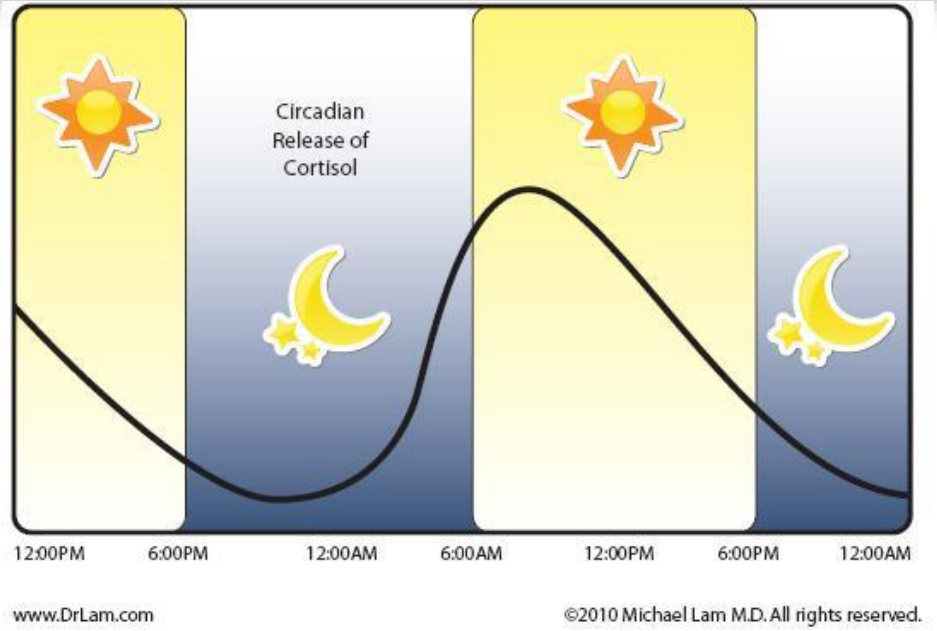
Available online at www.sciencedirect.com

SciVerse ScienceDirect

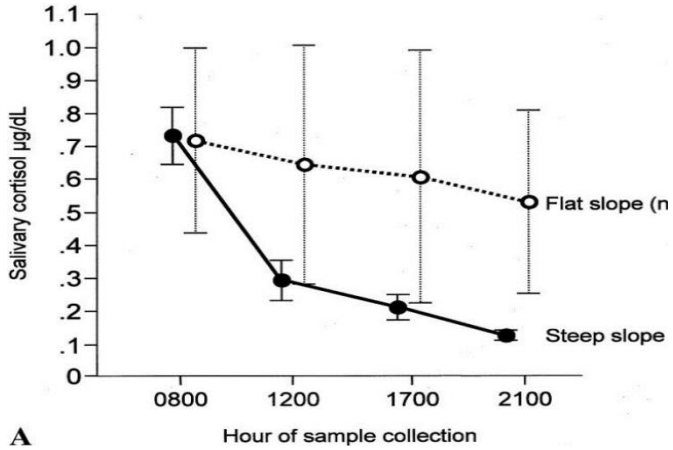
journal homepage: www.elsevier.com/locate/psyneuen

The associations between diurnal cortisol patterns, self-perceived social support, and sleep behavior in Chinese breast cancer patients

Rainbow T.H. Ho [a,b,*], Ted C.T. Fong [a], Caitlin K.P. Chan [b], Cecilia L.W. Chan [b]



Sleep and Cortisol Rhythm



- Sample: 181 breast cancer patients
- Poor sleep quality, a later time of awakening, shorter total sleep time were linked to flatter diurnal cortisol patterns
- Adequate sleep hours and good sleep quality may influence positive adjustment to stress and thus produce steeper diurnal cortisol patterns.

Sleep Medicine 15 (2014) 565–569

Contents lists available at ScienceDirect

Sleep Medicine

journal homepage: www.elsevier.com/locate/sleep

Original Article

Factor structure of the Chinese version of the Pittsburgh Sleep Quality Index in breast cancer patients

Rainbow T.H. Ho [a,b], Ted C.T. Fong [a,*]

- Sample: 197 women with breast cancer
- The severity of sleep dysfunction reflected in PSQI global score was positively correlated with anxiety, depression, fatigue, pain and reduced quality of life.

Psychoneuroendocrinology (2012) xxx, xxx–xxx

Available online at www.sciencedirect.com

SciVerse ScienceDirect

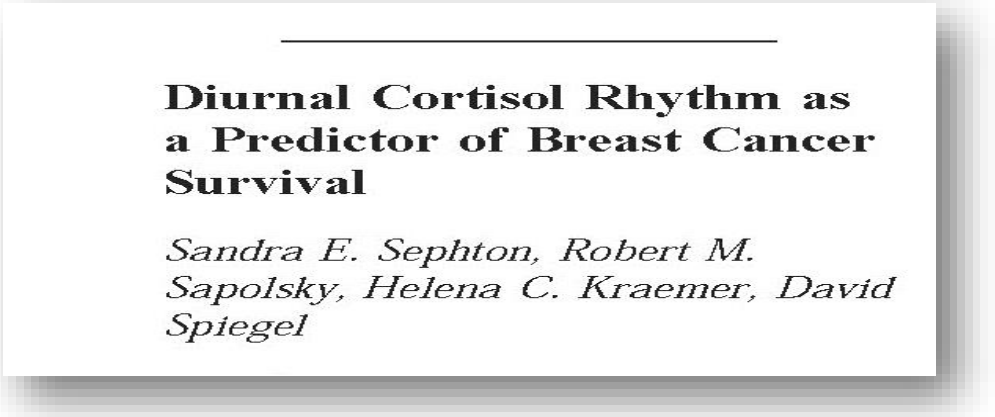
journal homepage: www.elsevier.com/locate/psyneuen

A longitudinal study of cortisol responses, sleep problems, and psychological well-being as the predictors of changes in depressive symptoms among breast cancer survivors

Fei-Hsiu Hsiao [a], King-Jen Chang [b,c], Wen-Hung Kuo [c,d], Chiun-Sheng Huang [d,c], Yu-Fen Liu [e], Yu-Ming Lai [f], Guey-Mei Jow [g,*], Rainbow T.H. Ho [h], Siu-Man Ng [h,j], Cecilia L.W. Chan [i]

- Sample: 76 women with breast cancer
- Sleep problems Index scores at baseline were associated with more sever initial depressive symptoms after age, BMI, cancer and treatment variables were controlled.

Cortisol Rhythm and Survival

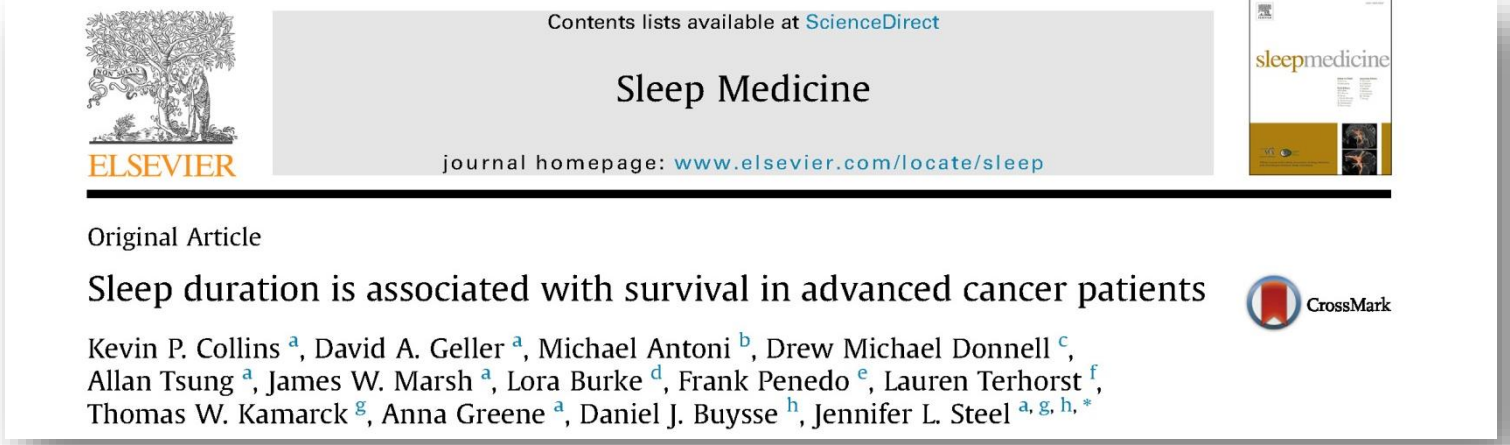


Diurnal Cortisol Rhythm as a Predictor of Breast Cancer Survival

Sandra E. Sephton, Robert M. Sapolsky, Helena C. Kraemer, David Spiegel

Septon et al, (2000) Journal of the National Cancer Institute, 92 (12): 994-1000

- Sample: 104 Patients with metastatic breast cancer
- Patients who had flattened or abnormal diurnal cortisol rhythms had earlier mortality
- Suppression of NK cell function and cell count



Contents lists available at ScienceDirect

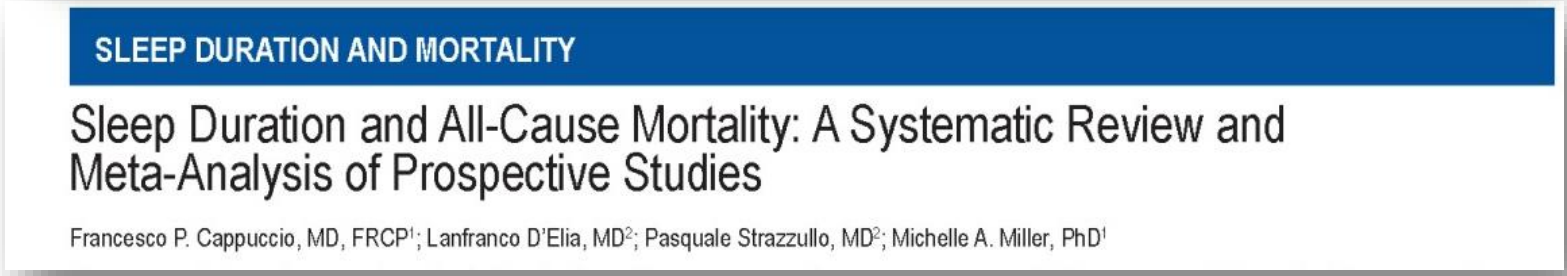
Sleep Medicine

journal homepage: www.elsevier.com/locate/sleep

Original Article

Sleep duration is associated with survival in advanced cancer patients

Kevin P. Collins [a], David A. Geller [a], Michael Antoni [b], Drew Michael Donnell [c], Allan Tsung [a], James W. Marsh [a], Lora Burke [d], Frank Penedo [e], Lauren Terhorst [f], Thomas W. Kamarck [g], Anna Greene [a], Daniel J. Buysse [h], Jennifer L. Steel [a, g, h, *]



SLEEP DURATION AND MORTALITY

Sleep Duration and All-Cause Mortality: A Systematic Review and Meta-Analysis of Prospective Studies

Francesco P. Cappuccio, MD, FRCP[1]; Lanfranco D'Elia, MD[2]; Pasquale Strazzullo, MD[2]; Michelle A. Miller, PhD[1]

- In 292 advanced cancer patients, short and long sleep duration were association with increased mortality
- In general population (n=1,282,999), short (<5hrs) and long duration (>9 hours) of sleep were associated with greater risk of death.

Psycho-oncology (2017) 26: 856-861)

Dyadic associations between psychological distress and sleep disturbance among Chinese patients with cancer and their spouses

Jessie S.M. Chan[1,2] | Nancy Xiaonan Yu[3] | Amy Y.M. Chow[1] | Cecilia L.W. Chan[1,2] | Ka-Fai Chung[4] | Rainbow T.H. Ho[1,2] | Siu-man Ng[1] | L.P. Yuen[5] | Celia H.Y. Chan[1]

- Sample: 135 + spouses
- There were significant patient-spouse associations on anxiety, depression and sleep disturbance.
- Anxiety had significant actor effects while depression had both the actor and partner effects on sleep disturbance in both the patients and their spouses.

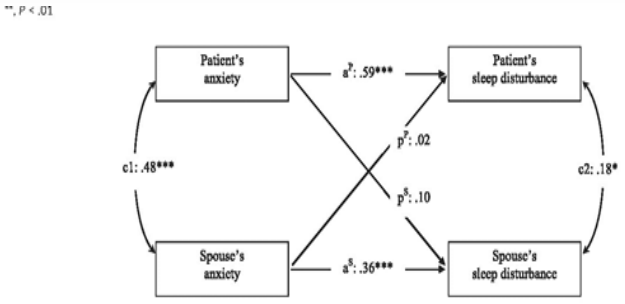


FIGURE 1 Dyadic associations of anxiety and sleep disturbance. Paths labeled *a* indicate the actor effects and paths labeled *p* indicate partner effects for patients (P) and their spouses (S); Correlation paths c1 and c2 represent links between patients and spouses. *, P < .05; **, P < .01; ***, P < .001

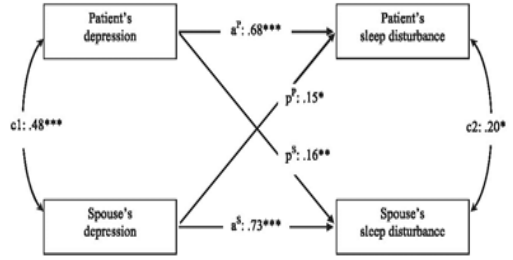


FIGURE 2 Dyadic associations of depression and sleep disturbance. Paths labeled *a* indicate the actor effects and paths labeled *p* indicate partner effects for patients (P) and their spouse (S). Correlation paths c1 and c2 represent links between the patients and spouses. *, P < .05; **, P < .01; ***, P < .001

What helps?

Research Article

Qigong Exercise Alleviates Fatigue, Anxiety, and Depressive Symptoms, Improves Sleep Quality, and Shortens Sleep Latency in Persons with Chronic Fatigue Syndrome-Like Illness

Jessie S. M. Chan,[1,2] Rainbow T. H. Ho,[1,2] Ka-fai Chung,[3] Chong-wen Wang,[1] Tzy-jyun Yao,[4] Siu-man Ng,[2] and Cecilia L. W. Chan[1,2]

- Sample: 150 Participants with chronic fatigue syndrome-like illness
- Intervention: 16 sessions (@1.5 hours) in 8-9 weeks
- Qigong (Baduanjin) significantly helped improve subjective sleep quality, sleep latency.
- The improvement in subjective sleep quality was maintained at 3-month post-intervention.

Table 3: Correlations between Pittsburgh Sleep Quality Index (PSQI), Chalder Fatigue Scale (ChFS), and Hospital Anxiety and Depression Scale (HADS) change scores with number of Qigong sessions attended and weekly duration of Qigong practice.

	Attendance frequency ($n = 75$)		Self-practice (min./week) ($n = 64$)			
Mean (SD)	11.9 (5.1)		145.4 (77.2)			
Median	15.0		151.7			
Interquartile	(8.0–16.0)		(105.8–185.9)			
T1 – T0	R	P	R	P	R^a	P^a
Change in PSQI	−0.288	0.013	−0.093	0.474	−0.101	0.439
Change in PSQI-subjective sleep quality	−0.422	0.001	−0.300	0.017	−0.315	0.013
Change in PSQI-sleep latency	−0.321	0.005	−0.205	0.104	−0.189	0.137
Change in PSQI-sleep duration	−0.089	0.445	0.107	0.401	0.115	0.371
Change in PSQI-sleep efficiency	−0.055	0.638	0.122	0.338	0.110	0.389
Change in PSQI-sleep disturbance	−0.266	0.021	−0.318	0.010	−0.303	0.018
Change in PSQI-use of sleep medication	0.039	0.743	0.007	0.956	−0.030	0.816
Change in PSQI-daytime dysfunction	−0.213	0.070	−0.083	0.520	−0.081	0.536
Change in total fatigue	−0.587	<0.001	−0.418	0.001	−0.398	0.001
Change in HADS-anxiety	−0.328	0.004	−0.269	0.031	−0.253	0.045
Change in HADS-depression	−0.420	<0.001	−0.397	0.001	−0.388	0.002
T2 – T0	R	P	R	P	R^a	P^a
Change in PSQI	−0.254	0.030	−0.099	0.442	−0.127	0.330
Change in PSQI-subjective sleep quality	−0.377	0.001	−0.272	0.031	−0.311	0.014
Change in PSQI-sleep latency	−0.255	0.027	−0.205	0.105	−0.222	0.080
Change in PSQI-sleep duration	−0.147	0.209	0.020	0.874	0.001	0.991
Change in PSQI-sleep efficiency	−0.071	0.548	0.126	0.322	0.110	0.393
Change in PSQI-sleep disturbance	−0.336	0.003	−0.235	0.062	−0.228	0.072
Change in PSQI-use of sleep medication	0.027	0.822	0.040	0.754	0.012	0.927
Change in PSQI-daytime dysfunction	−0.256	0.029	−0.157	0.222	−0.159	0.222
Change in total fatigue	−0.611	<0.001	−0.403	0.001	−0.360	0.004
Change in HADS-anxiety	−0.274	0.018	−0.313	0.012	−0.297	0.018
Change in HADS-depression	−0.286	0.013	−0.299	0.016	−0.292	0.020

T0: baseline; T1: immediate postintervention; T2: 3-month postintervention.
[a]Partial correlation controlling the amount of other exercises.

Original Article

Effects of a Short-Term Dance Movement Therapy Program on Symptoms and Stress in Patients With Breast Cancer Undergoing Radiotherapy: A Randomized, Controlled, Single-Blind Trial

Rainbow T.H. Ho, PhD, Ted C.T. Fong, MPhil, Irene K.M. Cheung, MSocSc, Paul S.F. Yip, PhD, and Mai-yee Luk, MBBS

Rainbow T. H. Ho, PhD
Phyllis H. Y. Lo, MPhil
Mai Yee Luk, MBBS

A Good Time to Dance? A Mixed-Methods Approach of the Effects of Dance Movement Therapy for Breast Cancer Patients During and After Radiotherapy

Table 2
Descriptive Statistics of Outcome Variables by Treatment Group

	DMT Group			Control Group		
	Baseline	Follow-up	Change	Baseline	Follow-up	Change
	($n = 69$)	($n = 66$)		($n = 70$)	($n = 64$)	
Outcome	Mean (SD)	Mean (SD)	%	Mean (SD)	Mean (SD)	%
Perceived stress	19.4 (4.3)	18.4 (4.6)	−5.2	19.2 (4.8)	19.5 (4.0)	+1.6
Anxiety	6.2 (3.1)	6.3 (3.8)	+1.6	5.7 (3.3)	5.7 (3.0)	—
Depression	5.5 (3.4)	5.5 (3.7)	—	5.8 (4.0)	5.5 (3.4)	−5.0
Fatigue severity	5.3 (2.3)	4.9 (1.9)	−7.6	4.9 (2.2)	4.6 (2.3)	−6.0
Fatigue interference	3.9 (2.2)	3.4 (2.2)	−12.8	3.8 (2.2)	3.4 (2.4)	−10.5
Pain severity	3.0 (2.1)	2.9 (2.0)	−3.7	2.5 (2.3)	3.1 (2.2)	+24.0
Pain interference	2.7 (2.2)	2.6 (2.2)	−3.7	2.1 (2.1)	2.6 (2.3)	+23.8
Sleep disturbance	7.5 (3.9)	7.1 (3.9)	−5.3	7.3 (4.2)	7.5 (4.2)	+2.7
Quality of life	97.1 (18.8)	98.9 (20.0)	+2.0	97.9 (18.1)	97.8 (18.4)	−0.1

- Sample: 139 women with breast cancer undergoing radiotherapy
- Intervention: 6 sessions (@1.5 hours)
- Participants revealed that the intervention helped improve their sleep quality

Sleep Medicine Reviews, Vol. 4, No. 4, pp 387–402, 2000
doi:10.1053/smrv.2000.0110,
available online at http://www.idealibrary.com on IDEAL®

SLEEP MEDICINE reviews

REVIEW ARTICLE

Exercise and sleep

Helen S. Driver[1] and Sheila R. Taylor[2]

- Moderate and regular exercises has therapeutic and sleep promoting benefits (leads to more sleep or deeper quality)
- Beneficial effects are more apparent in older populations and people with sleep complaints

J Behav Med (2015) 38:427–449
DOI 10.1007/s10865-015-9617-6

CrossMark

The effects of physical activity on sleep: a meta-analytic review

M. Alexandra Kredlow · Michelle C. Capozzoli · Bridget A. Hearon · Amanda W. Calkins · Michael W. Otto

- Review of 66 studies
- *Acute* exercise has small beneficial effects on total sleep time, sleep onset latency, sleep efficiency
- *Regular* exercise has small beneficial effects on total sleep time and sleep efficiency, small-to-medium beneficial effects on sleep onset latency, and moderate effects on sleep quality.

Contents lists available at ScienceDirect

Sleep Medicine Reviews

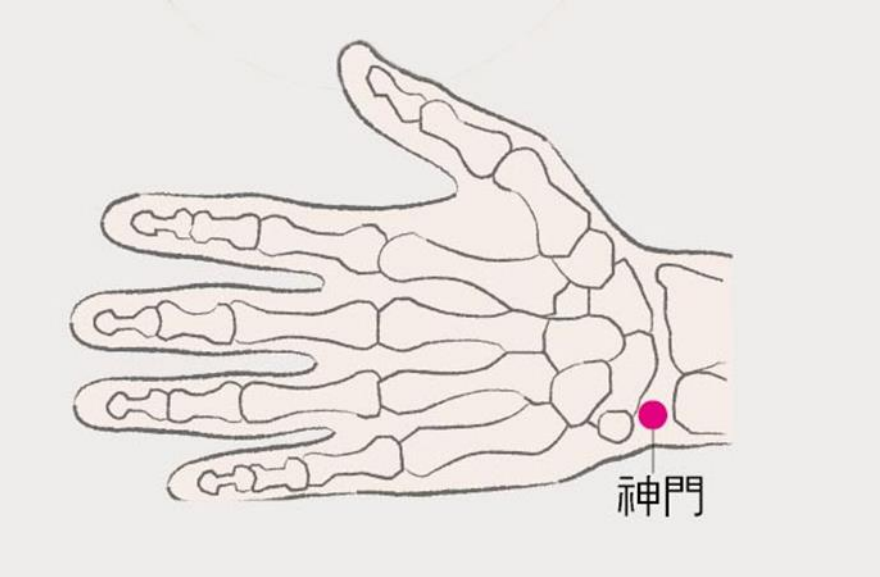
journal homepage: www.elsevier.com/locate/smrv

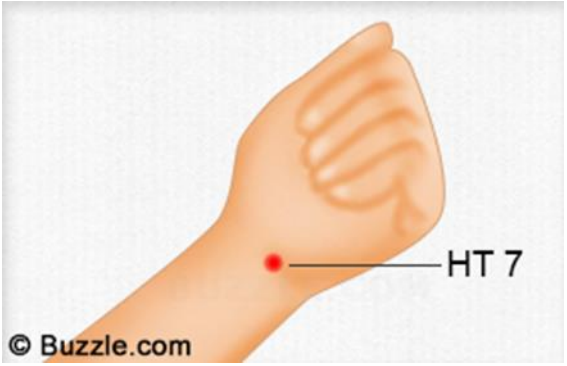
CLINICAL REVIEW

Acupressure effect on sleep quality: A systematic review and meta-analysis

Alexander Waits [a], You-Ren Tang [b], Hao-Min Cheng [c, d], Chen-Jei Tai [b, e, **], Li-Yin Chien [a, f, *]

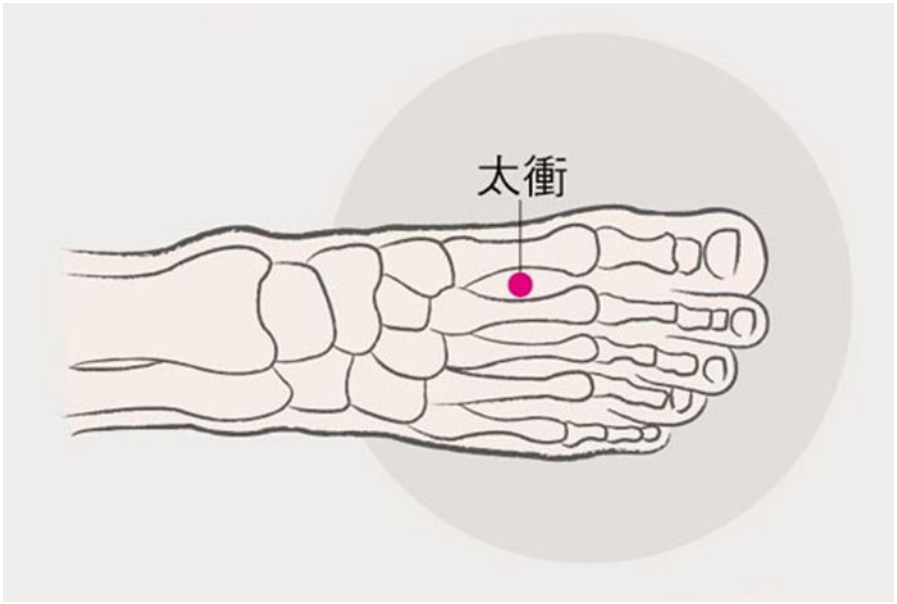
- Acupressure helped improve self-perceived sleep quality in diverse types of patients by affecting sleep latency and sleep duration without adverse effects.
- Acupressure can ameliorate poor sleep even in elderly patients and in those with severe medical comorbidities.

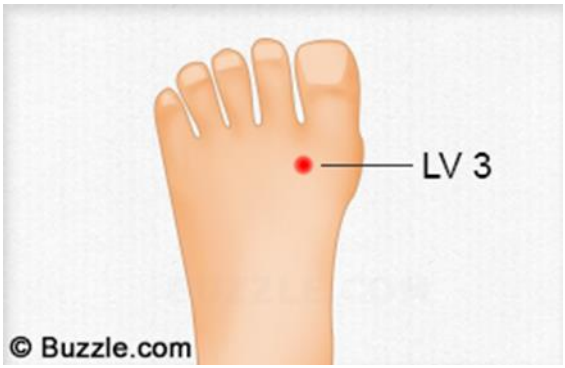




- Shen Men. The English name for this point is Spirit Gate.
- This pressure point is located on the wrist crease in line with your little finger and is known to calm the mind and heart, especially when surrounded by anxious thoughts.
- 神門穴： 以拇指掐按穴位，每次5秒鐘。建議早晚、左右手各按5分鐘
- 穴道位置： 仰掌，前臂掌側，腕橫紋之下，豌豆骨內側邊的凹陷處。
- 作用： 鎮靜安神，改善憂鬱、失眠、神經衰弱。

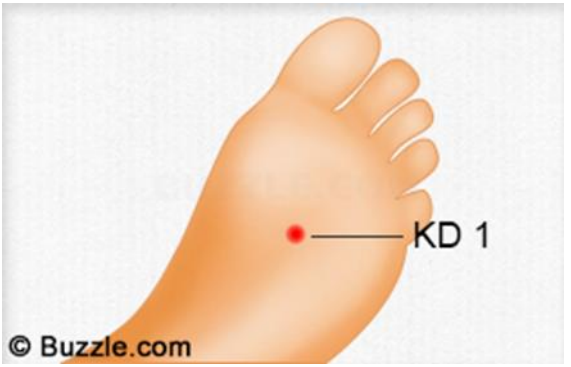
http://www.commonhealth.com.tw/article/article.action?nid=74402
https://www.buzzle.com/articles/how-to-put-someone-to-sleep-using-pressure-points.html





- Tai Chong. The English name for this point is Great Surge.
- This pressure point is located in the depression found in the junction between the first and second metatarsal bones
- Liver 3 (LV 3) is the calming point of the troubles associated with anxiety, anger, irritation - all of these being counted among the main causes of insomnia.
- 太衝穴： 以空的原子筆筆頭按壓3秒後停為1次，連續按壓7次。
- 作用： 安定焦躁的情緒
- 穴道位置： 足背側，第1、2趾蹠骨連接部的中央。

http://www.commonhealth.com.tw/article/article.action?nid=74402
https://www.buzzle.com/articles/how-to-put-someone-to-sleep-using-pressure-points.html



- Yongquan. The English name for this point is Gushing Spring.
- This pressure point is located on the sole of the foot in the depression under the ball of the foot between the second and the third metatarsal bone .
- This point is known to renew and vitalize the mind and body, thereby clearing the mind and draining all the exhausting energies from it.
- 湧泉穴: 腳掌底前半凹陷處，第2、3腳趾趾縫延伸到足跟連線約三分之一處，促進氣血循環、助眠

http://www.commonhealth.com.tw/article/article.action?nid=74402
https://www.buzzle.com/articles/how-to-put-someone-to-sleep-using-pressure-points.html

Thank You! Good Sleep!

http://annieschildsleepsolutions.com/baby/