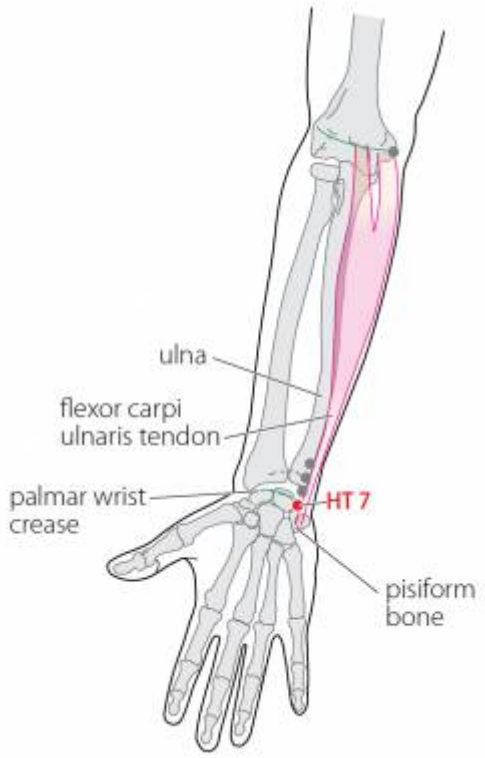
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7C Shenmen 神门（神門）

prononciation shenmen.mp3

articles connexes: - 6C - 8C - Méridien -



WHO 2009

1. Dénomination

1.1. Traduction

神门[神門] ***Shénmén***	Porte de l'esprit (Nguyen Van Nghi 1971, Lade 1994) Porte du *Shen* (Pan1993)	Spirit gate (Li Ding 1992)

- Zhou Mei-sheng 1984 : *shen* mind; the state of mind; spirit; the *Yang* energy of the body; *men* gate; see *Yunmen* (1.2)
- *Shen* (Ricci 4317) : les esprits, divinités, génies, divin, l'Esprit suprême, Dieu, principe vital supérieur, vitalité (Guillaume 1995); plusieurs gloses s'affrontent : un phénomène naturel : tourbillon de la foudre et nuées d'orage d'où : expansion, manifestation, renouvellement des puissances célestes ; ou volutes de fumée d'un sacrifice (expression, manifestation qui s'élève vers les divinités). Représentation de mains qui s'opposent pour tendre une corde, symbole de l'alternance des forces naturelles. La recatégorisation de *shen* par 示, *shì*, la clé des affaires religieuses (K 113), fait évoluer le sens vers : influx des puissances d'en haut, d'où : puissances célestes, divinités, esprit ; principe vital supérieur, quintessence de l'énergie vitale ; esprit, âme supérieure ; vitalité (Laurent 2000).
- *Men* (Ricci 3426) : porte, portail, voie d'accès, entrée ou sortie, ouverture, orifice (Guillaume 1995); Cf. 2P, *Yunmen* (Laurent 2000).

1.2. Origine

- Jia yi jing (Guillaume 1995).

1.3. Explication du nom

- Zhou Mei-sheng 1984 : *Shenmen* Taoist called the eye *Shenmen*, the gate for spirit to go in or out.
- Pan 1993 : Il est appelé « Porte du *Shen* » parce qu'il ouvre le Cœur et soulage la tension mentale.
- Lade 1994 : Le nom fait référence à une “porte” sur le méridien du Cœur, par laquelle on peut atteindre directement l'énergie hôte de l'Organe (l'Esprit). Dans le Taoïsme, *shen men* fait référence aux yeux (qui reflètent la présence et la force de l'Esprit), endroit par lequel l'Esprit entre et sort.
- Laurent 2000 : Le Su Wen définit ce point comme “le palais de la radiance lumineuse”. *Shen* peut avoir deux sens esprit lié à la pensée ou vitalité se rattachant au *yang* fondamental ; dans l'expression *jing/shen*, *shen* représente le principe d'organisation de la matière vivante, *jing* étant sa capacité de développement.

1.4. Noms secondaires

兑冲［兌衝］ ***Duìchōng* (1)**	Carrefour d'échanges (Laurent 2000)	Jia yi jing (Guillaume 1995)
中都 ***Zhōngdū* (2)**	Capitale centrale (Laurent 2000)	Jia yi jing (Guillaume 1995)
锐中［銳中］ ***Ruìzhōng* (3)**	Centre de la perspicacité (Laurent 2000)	Zhen jiu ju ying (Guillaume 1995)
兌骨 ***Duìgǔ* (4)**	Styloïde cubitale (Ellis 1993)	Nan jing, difficulté 66 (Guillaume 1995)

1. *Dui* (Ricci : 5321) : échanger, troquer, transvaser. L'un des 8 trigrammes du Livre des Mutations. Le 58e des 64 hexagrammes. *Chong* (Ricci 1286-1294) : lieu de passage, carrefour ; se précipiter sur, heurter.
2. *Zhong* (Ricci 1266) : milieu, centre, l'intérieur, le juste milieu. *Du* (Ricci 5287) : capitale, beau, florissant, glorieux, prospère.
3. *Rui* (Ricci 2479) : pointe, aigu, acéré, coupant, tranchant, pénétrant, perspicace, pointu, effilé. *Zhong* (Ricci 1266).
4. *Dui* (Ricci 5321). *Gu* (Ricci 2727) : os, ossements, restes, ossature, armature, monture.

1.5. Translittérations

- (fra)
- (eng)
- (viet)

1.6. Code alphanumérique

7C, 7CO, C7, CO7 (Cœur)

HT7, H7 (Heart)

2. Localisation

2.1. Textes modernes

- Nguyen Van Nghi 1971 : Dans un creux, sur le bord interne du pisiforme sur le pli de flexion du poignet, sur l'artère cubitale.
- Roustan 1979 : sur le pli antérieur du poignet, au bord radial du tendon du cubital antérieur.
- Deng 1993 : Sur le poignet, à l'extrémité cubitale de la pliure, dans la dépression qui se forme sur le bord radial du tendon du muscle fléchisseur.
- Pan 1993 : *Shenmen* se trouve sur le pli antérieur du poignet, sur le bord antéro-externe du pisiforme.
- Guillaume 1995 : Au bord supérieur du pisiforme, sur le côté latéral du tendon du muscle fléchisseur ulnaire du carpe.
- Laurent 2000 : Sur la partie interne du pli de flexion antérieur du poignet, dans l'angle formé par le pisiforme et le cubital antérieur.
- WHO 2009: On the anteromedial aspect of the wrist, radial to the flexor carpi ulnaris tendon, on the palmar wrist crease.

Note: In the depression radial to the proximal border of the pisiform bone, on the palmar wrist crease.
Items de localisation

2.2. Textes classiques

- Ling Shu : A l'extrémité de l'os pisiforme“ (Deng 1993)
- Jia Yi : Dans la dépression située en arrière de l'extrémité de l'os pisiforme” (Deng 1993).
- Deng 1993: Ce point se trouve dans la dépression située en arrière de l'os pisiforme. Aujourd'hui, on le localise à l'extrémité cubitale du pli carpien et dans la dépression qui se situe sur le bord radial du tendon du muscle fléchisseur cubital du poignet.

2.3. Rapports et coupes anatomiques

- Roustan 1979 : Artère ulnaris, ramus superficialis et tronc du nerf ulnaris.
- Deng 1993 : Peau—tissu sous-cutané—bord radial du tendon du muscle fléchisseur cubital du poignet. Dans la couche superficielle, on trouve le nerf cutané interne de l'avant-bras, les tributaires de la veine basilique et les branches palmaires du nerf cubital. Dans la couche profonde, on trouve l'artère et la veine cubitales et le nerf cubital.
- Guillaume 1995 : Veine basilique, artère ulnaire. Branche postérieure du nerf médial cutané de l'avantbras, branche palmaire du nerf ulnaire, nerf ulnaire.

2.4. Rapports ponctuels

3. Classes et fonctions

3.1. Classe ponctuelle

- Point *Shu* de *Shoushaoyin* (Roustan 1979), de nature Terre (Laurent 2000)
- Nguyen Van Nghi 1971 : Point Iu-Iunn du méridien, correspondant à l'élément Terre. Point de dispersion du méridien principal du cœur et non du cœur lui-même (organe). Rappelons que le cœur n'a pas de point Iu ; si le cœur est atteint, on puncture le Taé Ling (7 M.C.) qui est le point Iu- Iunn du Maître du cœur. Point spécial à puncturer lorsque l'énergie perverse (chaleur) pénètre dans le méridien du cœur, le malade présente alors les signes suivants : malaise au cœur, désir de boissons glacées, frissons durant longtemps, fièvre de courte durée. Il fait partie du groupe des points pour traiter la « syncope cadavérique » provoquée par les troubles des méridiens distincts des poumons, des reins, du cœur et de l'estomac.
- Point *Yuan* du cœur (Roustan 1979)
- Point de dispersion de nature Feu (Laurent 2000)

3.2. Classe thérapeutique

- Roustan 1979 : Calme l'esprit et le cœur, fait communiquer (stimule) les *Luo*.
- Tai yi shen zhen : *Shenmen* apaise et calme l'Esprit, purifie le Cœur, ouvre les orifices (Guillaume 1995).
- Guillaume 1995 : *Shenmen* régularise le Cœur et calme le *Shen*.
- Laurent 2000 : Tonifie l'énergie du Cœur, calme le *shen*, tonifie le sang qui calme le *shen*, disperse le feu du Cœur, ouvre les orifices, favorise le sommeil, traite l'épilepsie, arrête les pertes séminales, atténue les pertes de mémoire, traite les règles perturbées par les émotions.

4. Techniques de stimulation

Acupuncture	**Moxibustion**	**Source**
Selon Tong ren, puncturer à 0,3 distance, laisser l'aiguille le temps de 7 expirations	Appliquer 7 cônes de moxa	Zhen jiu ju ying (Guillaume 1995)
Piquer perpendiculairement, légèrement du côté cubital, à 0,3-0,5 distance	Cautériser 1-3 fois, chauffer 5-15 minutes	Roustan 1979
Puncture perpendiculaire entre 0,3 et 0,5 distance de profondeur	Cautérisation avec 1 à 3 cônes de moxa, moxibustion pendant 3 à 5 minutes	Guillaume 1995
Piqûre perpendiculaire de 0,3 à 0,5 *cun*	Moxas : 3; chauffer 15 mn	Laurent 2000

Sensation de puncture
Roustan 1979 : sensation locale de gonflement ou, parfois, de décharge électrique qui diffuse vers les doigts.

Sécurité

5. Indications

Classe d'usage	★★	point majeur

5.1. Littérature moderne

- Nguyen Van Nghi 1971 : Point à puncturer principalement dans les cas de : rêves, insomnie, frayeur, tachycardie, hystérie.
- Roustan 1979 : Neurasthénie, palpitations, insomnie, rêves en excès, maladies cardiaques, angine de poitrine, affections psychiques, hystérie. Épilepsie, hémoptysie, vomissements, ictère, algies thoraciques latérales, aphonie, dyspnée.
- Pan 1993 : utilisé pour traiter l'insomnie, les troubles mentaux et les maladies cardiaques.
- Lade 1994 :
  - Régularise et tonifie le Cœur (surtout le *Qi*, le Sang, le *Yin* et le *Yang*), transforme les Glaires du Cœur, et est bénéfique pour la langue. Indications : sensation que le cœur est dilaté, douleur de la poitrine avec palpitations, arythmie, sensations vertigineuses, céphalées, paralysie du muscle hypoglosse de la langue, aphasie, dyspnée asthmatiforme, malaise, et neurasthénie.
  - Clarifie le Feu du Cœur, la Chaleur du Cœur, la Chaleur-Vide du Cœur et rafraîchit la Chaleur du Sang. Indications : Hypertension, hyperthyroïdie avec sommeil perturbé par les rêves, sensation de fièvre dans les paumes des mains par vide, désir de boissons froides, fièvre et frissons (avec prédominance des frissons), perte de l'appétit avec obstruction douloureuse de la gorge, hémoptysie, sang dans les selles, et eczéma avec prurit intense.
  - Calme l'Esprit, fortifie et clarifie le Cerveau, et disperse les Glaires-Vent. Indications : démence, manie, épilepsie, retard mental, dépression, hyperactivité, agitation, frayeur, anxiété et palpitations, insomnie, sommeil perturbé par les rêves, paroles délirantes, pertes de mémoire, désorientation, incontinence urinaire, impuissance, et pollutions nocturnes.
- Guillaume 1995 : Douleur du Cœur, inquiétude, palpitations avec angoisse, plénitude du thorax et douleur abdominale, dyspnée avec reflux de *Qi* vers le haut, vomissements et présence de sang dons les crachats, folie-*dian kuang*, syndromes convulsifs, insomnie, perte de mémoire, douleur des flancs, yeux jaunes, sécheresse de la gorge, *Bi* de la gorge, perte de la voix, douleur du bras ; dépression nerveuse, mélancolie, angine de poitrine, arythmie, hypertension artérielle, douleur des articulations du poignet.

5.2. Littérature ancienne

- Su wen : Chapitre « L'acupuncture dans les malarias » : « La malaria du Cœur cause une vive sensation d'étouffement du Cœur avec soif d'eau froide ; par contre les accès sont surtout froids ou pas très chauds. On pique le point *Shenmen*- 7C du vaisseau du Cœur » (Guillaume 1995).
- Ling shu : Chapitre « Des cinq troubles » : « Lorsque le trouble énergétique se manifeste dans le Cœur, on puncture le point spécifique *shu* qui régit le Cœur ou *Shoushaoyin*, *Shenmen*- 7C et du Maître du Cœur, *Daling*- 7MC » (Guillaume 1995).
- Ishimpo : Énurésie ; sensation de chaud et de froid dans le bras et dans la main ; vomissement de sang; reflux de *Qi* ; plénitude du thorax ; distension abdominale ; *Bi* de la gorge ; sifflements et essoufflement ; respiration courte (Guillaume 1995).
- Yu long hi : « *Shen men* traite les épilepsies-*dian xian* » (Guillaume 1995).

- Bai zheng fu : « Associé à *Shangwan*- 13VC, il traite les accès de folie-*fa kuang* avec agitation » (Guillaume 1995).
- Zhen jiu ju ying : maladie pernicieuse-*nue* avec inquiétude intense, crainte du froid et recherche de la chaleur. Sécheresse de la gorge avec inappétence, douleur du Cœur avec éructations, peur et palpitations-*kong ji*, insuffisance de *Qi*, froid du bras et de l'avant-bras, faciès rouge avec tendance à rire, chaleur de la paume de la main avec nausées, ictère conjonctival, douleur intercostale, dyspnée par reflux, chaleur du corps, accès de folie-*kuang* avec tristesse sans objet et rire sans raison, vomissement de sang, frissons avec remontée du *Qi*, perte d'urine, aphonie, hébétude, perte de mémoire, syndrome d'accumulation-*ji* au niveau du Cœur et de la région épigastrique, les cinq convulsions-*wu xian* des adultes et des enfants ». Li Dongyuan dit : « Quand le *Qi* de l'Estomac descend, il y a perturbation du *Qi* des Cinq Organes et apparition de diverses maladies. Quand le *Qi* se trouve au niveau du Cœur, on peut piquer *Shenmen*- 7C, point *Shu* du *Shoushaoyin* pour régulariser le *Qi* et faire qu'il retrouve sa place ». Selon Ling shu : « “Le *Shao yin* n'a pas de *shu*” cela signifie-t-il que le Cœur n'est jamais malade ? (Dans Nei jing, il n'y a que 11 méridiens, le point *shu* du méridien du Cœur est remplacé par le point *shu* du *Xin bao luo*), son méridien extérieur est affecté, l'organe n'est pas atteint, alors on pique uniquement son méridien au niveau de l'extrémité du cubitus en arrière de la paume de la main. Le Cœur, c'est le grand maître des Cinq Organes et des Six Entrailles, c'est le logis des Cinq *jing shen* ; son organe est fort, le pervers ne peut pas l'atteindre ; si le pervers gagne cet organe, le sujet meurt, c'est pour cette raison que les différents pervers restent au niveau du *Bao luo* du Cœur. Le *bao luo*, c'est le *mai* du Cœur » (Guillaume 1995).
- Yi xue ru men : « Rires et pleurs sans motif, *Bi* de la gorge, douleur du Cœur, soupirs fréquents, terreur avec souffle court, accès pernicieux-*nue ji*, crainte du froid après phlegmes froides-*han yin*, contracture du bras, dyspnée et reflux, perte d'urine, les cinq convulsions-*wu xian* des adultes et des enfants » (Guillaume 1995).
- Da cheng : « Maladie pernicieuse-nue avec inquiétude, tendance à boire des boissons froides dans les cas graves ; crainte du froid avec tendance à rechercher la chaleur. Sécheresse de la gorge avec inappétence, douleur du Cœur avec éructations, peur et palpitations-*kong ji*, insuffisance de *Qi*, froid du bras et de l'avant-bras, faciès rouge, tendance à rire, chaleur de la paume de la main avec nausées, ictère conjonctival, douleur intercostale, dyspnée par reflux, chaleur du corps, tristesse sans objet-*kuang bei*, rire sans raison-*kuang xiao*, vomissement de sang, frissons avec remontée du *Qi*, perte d'urine, aphonie, hébétude, perte de mémoire, syndrome d'accumulation *ji* ou niveau du Cœur et de la région épigastrique, les cinq convulsions-*wu xian* des adultes et des enfants ». Le Da cheng poursuit avec la citation de Li Dongyuan (Guillaume 1995).
- Lei jing tu yi : « Accès pernicieux-*nue ji* avec nervosité et inquiétude-*xin fan*, tendance à boire des boissons froides, crainte du froid avec tendance à rechercher la chaleur, sécheresse de la gorge avec inappétence, angoisse-*jing kui* avec douleur du Cœur et insuffisance de souffle, chaleur du corps, visage rouge, accès de folie-*fa kuang* avec tendance à rire, reflux de *Qi* vers le haut avec vomissement de sang, pertes d'urine, perte de la voix et perte de mémoire, stagnation des aliments au niveau du Cœur (épigastre), les cinq syndromes épileptiques-*wu xian* des adultes et des enfants, contracture du membre supérieur » (Guillaume 1995).
- Tai yi shen zhen : « Maladie pernicieuse-*nue ji*, anxiété, palpitations, crainte du froid, accès de folie-*fa kuang* avec rires incessants. C'est un des points essentiels du traitement des cinq convulsions et de l'hébétude (mélancolie), tant chez l'adulte que chez l'enfant » (Guillaume 1995).

5.3. Associations

Indication	Association	Source
Folie agitée	**7C** + 13VC	Bai Zhen Fu (Roustan 1979)
Accès de rire dans la folie-*Kuang*	**7C** + 5IG	Qian jin (Guillaume 1995)
Insomnie	**7C** + 6Rte	Zhen jia xue (Guillaume 1995)
Hébétude	**7C** + 11P + 1Rn + 15V	Da cheng (Guillaume 1995)
Arythmie cardiaque	**7C** + 15V + 6MC + 34VB vers 9Rte	Roustan 1979
Palpitations, souffle court	**7C** + 14VC + 5F	Zi sheng jing (Guillaume 1995)
Angoisse, douleur du Coeur	**7C** + 9C + 2Rn + 34VB + 6MC	Ji cheng (Guillaume 1995)
Vide de *Qi* et angoisse	**7C** + 12VC + 6VC + 36E	Zhong hua zhen jiu xue (Guillaume 1995)
Contracture du bras	**7C** + 3C	Qian jin (Guillaume 1995)

5.4. Revues des indications

- Feng SW, Zeng F, Ren YL, Liang FR. [Discussion on Disease Spectrum Treated with Acupuncture at Shenmen (HT 7) and its Compatibility Based on Bibliometrics]. Chinese Acupuncture and Moxibustion. 2014;34(6):561-4. [174996].

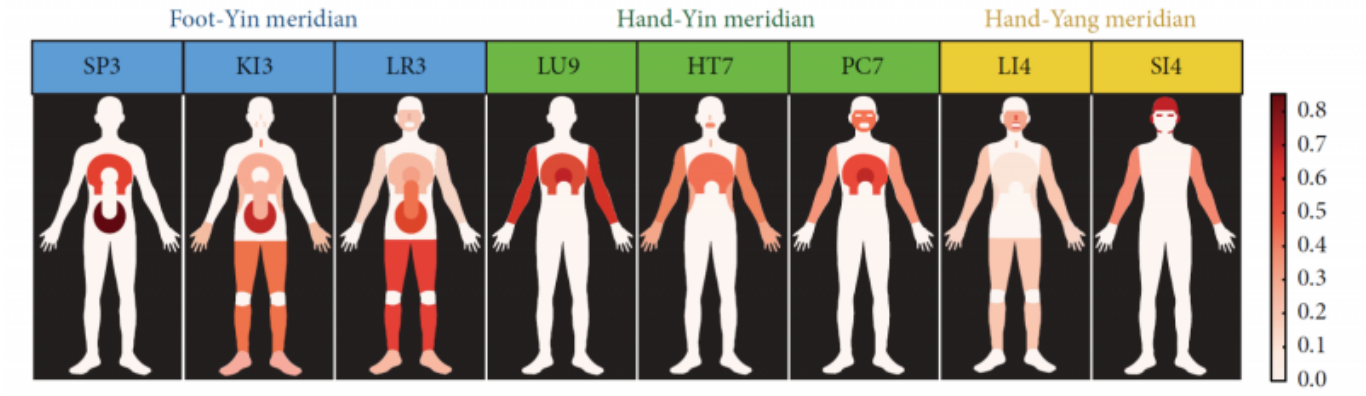
  The modern literatures on the diseases treated with acupuncture at Shenmen (HT 7) were collected. Using literature statistical analysis in bibliometrics, the common compatibility of Shenmen (HT 7) and the disease spectrum were analyzed so as to provide the references of the diseases that can be treated with acupuncture at Shenmen (HT 7). It was found that 39 kinds of diseases and symptoms, mainly nerve system diseases, could be treated with acupuncture at Shenmen (HT 7), including insomnia, depression, anxiety and dementia. Shenmen (HT 7) was seldom used alone. Instead, it was commonly used along with Baihui (GV 20), Sanyinjiao (SP 6), Neiguan (PC 6), Sishencong (EX-HN 1) and Taicong (LR 3).

- Qi Feng Hua, Qi Feng Ling , Qi Yun Yan. L'application clinique de la combinaison de : Shen Men (7 C.), Zu San Li (36 E.), San Yin Jiao (6 Rt) et Tai Chong (3 F.). Acupuncture Traditionelle Chinoise. 2004;10:91. [136154].

  Source : Zhen Jiu Lin Chuang Za Zi (Revue de la Clinique d'Acupuncture-Moxibustion) 4/1998, p. 48-50

- Zhang Shu-Yan. l ' application du point Shen Men (7 C) dans les maladies du systeme digestif. Acupuncture Traditionnelle Chinoise. 2002;7:95. [109786]
- Jung WM, Lee T, Lee IS, Kim S , Jang H, Kim SY, Park HJ, Chae Y. Spatial patterns of the indications of acupoints using data mining in classic medical text: a possible visualization of the meridian system. Evid Based Complement Alternat Med. 2015. [184044].

  The indications of acupoints are thought to be highly associated with the lines of the meridian systems. The present study used data mining methods to analyze the characteristics of the indications of each acupoint and to visualize the relationships between the acupoints and disease sites in the classic Korean medical text Chimgoogyeongheombang. Using a term frequency-inverse document frequency (tf-idf) scheme, the present study extracted valuable data regarding the indications of each acupoint according to the frequency of the cooccurrences of eight Source points and eighteen disease sites. Furthermore, the spatial patterns of the indications of each acupoint on a body map were visualized according to the tf-idf values. Each acupoint along the different meridians exhibited different constellation patterns at various disease sites. Additionally, the spatial patterns of the indications of each acupoint were highly associated with the route of the corresponding meridian. The present findings demonstrate that the indications of each acupoint were primarily associated with the corresponding meridian system. Furthermore, these findings suggest that the routes of the meridians may have clinical implications in terms of identifying the constellations of the indications of acupoints.



The visualization of the indications of the acupoints on a body map. Eight Source points representing the three meridian systems (Foot-Yin, Hand-Yin, and Hand-Yang meridian) and the indications of each acupoint (tf-idf value)were visualized on a human body template (Jung 2015).

6. Etudes cliniques et expérimentales

6.1. Douleur

- Xie Gan Gong et al. L'application de Shen Men (7 C) et de Tong Li (5 C) dans le traitement des douleurs. Acupuncture Traditionnelle Chinoise. 2000;2:73. [79195].

  Traduction de la Revue “Journal de l'Etude en Acupuncture-Moxibustion 1992; 6: 40.

- Shigematsu S et al. Regarding Actions of Lingdao, Yinxi and Shenmen on Psychosomatic Disease and Chronic Pain. Third World Conference on Acupuncture. 1993;196. [4440].
- Lee BH, Ku JY, Zhao RJ, Kim HY, Yang CH, Gwak YS, Chang SC, Kim NJ, Kim JS, Lee YK, Lee HJ, Lim SC. Acupuncture at HT 7 Suppresses Morphine Self-Administration at High Dose through Gaba System. Neurosci Lett. 2014;:34-9. [177774].

  In the previous study, acupuncture at HT7 has shown to attenuate the self-administration of morphine at a low dose (0.1mg/kg). In this study, it was further investigated whether acupuncture at HT7 could attenuate the morphine self-administration at a high dose (0.5mg/kg). Male Sprague-Dawley rats weighing 270-300g were used. After surgery of catheterization, animals were trained to self-administer morphine solution (0.5mg/kg) using daily 1h session under fixed ratio 1 schedule for 3 weeks. Animals that had shown stable morphine-taking (establish baseline: variation less than 20% of the mean of three consecutive days) were subjected to the acupuncture treatment. Bicuculline and SCH 50911 were used to investigate the possible relation between the effect of acupuncture and the GABA receptor system. Acupuncture at HT7, but not at control acupoint, LI5, suppressed spontaneous morphine-taking behavior significantly. In addition, the effect of acupuncture was blocked by both GABA receptor antagonists. The results of this study suggest that acupuncture at HT7 suppresses morphine-taking behavior through the mediation of GABA receptor system.

6.2. Coronaropathies

- Tao Zhili et al. The Probe into Mechanism of Acupuncture the “Nei Guan”, “Jian Shi” and “Shen Men” Points for Treatment the Heart Diseases. (Abstract). Acupuncture Research. 1991;16(3-4):213. [64084].

  We adopted the horseradish peroxidase (HRP) method probe into the segmental distributions of the afferent neurons of the heart and P6, P5 and H7. 10% HRP 50-60μl was injected into P6 of 10 cats, the P5 of 10 cats, H7 of 10 cats and 100-150μl injected into the epicardium and the myocardium of 20 others. The

labelled neurons were discovered in the dorsal ganglions in C5-8 and T2 when HRP injected into P6, in C6-8 and T2 when HRP injected into P5, in C6-T2 when HRP injected into H7 and in C8-T1-10 when HRP injected into the epicardium and the myocardium. The experiment showed that there are mutual intersect and overlapping in the C8-T2 spinal ganglions between the afferents of the points and the heart. It may be the neuroanatomical foundations of acupuncture of P6, P5 and H7 for treatment the heart diseases. It also provides the neuroanatomical foundation for somato-visceral connections.

- Zhang Zhaohui et al. [Effect of Acupuncture at Neiguan (PC 6) and Shenmen (HT 7) Points on Platelet Activity in Patients of Coronary Heart Disease]. Chinese Acupuncture and Moxibustion. 2000;20(2):119. [73515] .

  In order to probe into the therapeutic effect and the mechanism of acupuncture and moxibustion for treatment of coronary heart disease, 60 cases that accorded with diagnostic criteria of coronary heart disease established by WHOM were randomly assigned to two groups. The treatment group received acupuncture at Neiguan (PC 6) and Shenmen (HT7) acupoints and the control group received intravenous drip of polarised liquid. The treatment for the two groups was given once a day and 14 days constituted one therapeutic course. GMP-140, plat and EKG were detected before treatment and after one course respectively. Results showed that GMP-140 after treatment was significantly lower than that before treatment in the treatment group (P<0.01), indicating that acupuncture at Neiguan (PC 6) and Shenmen (HT 7) points can inhibit activity of platelet, prevent thrombosis and improve coronary artery hired flow.

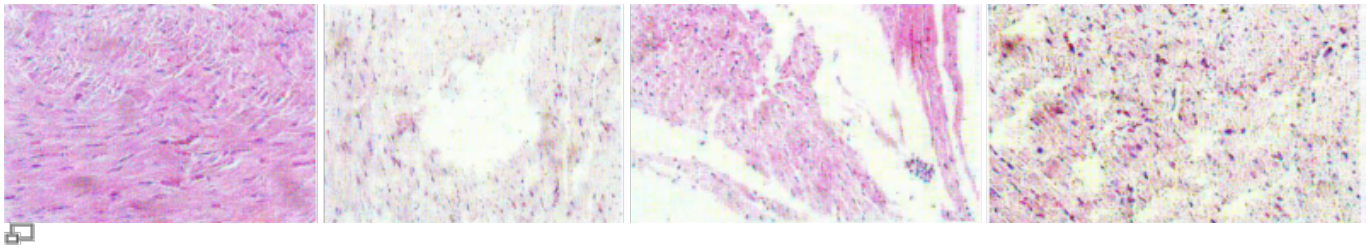
- Cai RL, Hu L, Zhou YP, Wu ZJ, Wang KM, Tang XM, Li M, Li ZH. [Effects of Electroacupuncture of “Shenmen” (HT 7) and “Zhizheng” (SI 7) on Cardiac Function and Electrical Activities of Cardiac Sympathetic Nerve in Acute Myocardial Ischemia Rabbits]. Acupuncture Research. 2007;32(4):243. [147244].

  OBJECTIVE: To observe the effect of electroacupuncture (EA) of “Shenmen” (HT 7) and “Zhizheng” (SI 7) on cardiac function and electrical activities of the cardiac sympathetic nerve in acute myocardial schemia rabbits. METHODS: Forty livid-blue rabbits were randomly divided into normal control, model, “Shenmen” (HT 7) and “Zhizheng” (517) groups with 10 cases in each group. Acute myocardial ischemia (AMI) model was established by intravenous injection of pituitrin (3 U/kg). Changes of heart rate (HR), maximum rising rate (+dp/dt max) and maximum descending rate (-dp/dt max) of the left ventricular systolic pressure (LVSP), and discharges of cardiac sympathetic nerve (superior cardiac branch) were recorded. EA (2 Hz, 5 V) was applied to bilateral “Shenmen” (HT 7) and “Zhizheng” (SI 7) for 30 mm. RESULTS: After AMI, HR, LVSP, +dp/dt max and firing frequency of cardiac sympathetic nerve decreased significantly (P < 0.01), and -dp/dt max increased obviously in model group (P < 0.01). Compared with model group, HR, +dp/dt max and cardiac sympathetic discharge of HT7 and S17 groups increased significantly 10 mm and 20 mm after EA (P < 0.05, 0.01), and -dp/dt max of the later 2 groups reduced evidently 20 mm after EA (P < 0.05, 0.01). No significant differences were found between HT7 and control groups in HR, LVSP and the firing frequency of cardiac nerve 20 mm and 30 mm after EA, and between SI7 and control groups in the firing frequency of cardiac nerve 30 mm after EA (P > 0.05). The effects of group HT7 were significantly better than those of SI7 (P < 0.05). CONCLUSION: EA of both HT7 and SI7 can obviously improve cardiac function and electrical activity of cardiac sympathetic nerve in AMI, and the effects of HT7 are markedly better than those of SI7.

- Wu ZJ, Cai RL, He L, Ma Y, Hu WB, Wang KM. [Effects of Electroacupuncture Stimulation of “Neiguan” (PC 6) and “Shenmen” (HT 7) on Contents of 5-Hydroxytryptamine in Hypothalamic Paraventricular Nucleus Region and Serum in hyperlipidemia rats with acute myocardial infarction]. Acupuncture Research. 2013;38(6):482-7. [164571].

  OBJECTIVE: To observe the effects of electroacupuncture (EA) stimulation of “Neiguan”(PC 6) and “Shenmen” (HT 7) on 5-hydroxytryptamine (5-HT) levels in the paraventricular nucleus (PVN) region of hypothalamus and serum in hyperlipidemia rats with acute myocardial infarction (AMI). METHODS: A total of 80 SD rats with hyperlipidemia were used in the present study. Among them, 20 rats were randomly selected to be the sham-operation group, and the rest 60 cases were used to make the AMI model by occlusion of the anterior descending branch of the left coronary artery. The 60 rats who were identified to be successful in AMI were randomly divided into model group, EA-PC 6 group and EA-HT 7 group (20 rats/group). EA (2 Hz, 2 mA) was applied to bilateral PC 6 and HT 7 for 20 min, once daily for 5 days. The contents of 5-HT of hypothalamic PVN region and serum were examined by enzyme linked immunosorbent

assay (ELISA) and radioimmunoassay, respectively. RESULTS: Following AMI, marked myocardial injury (swelling, breakage, disappearance of local transverse striations and necrosis of myocytes) with infiltration of neutrophil granulocytes was found in the model group, while in both EA-PC 6 group and EA-HT 7 group, moderate swelling (no breakage) of fewer myocardial fibers with mild infiltration of neutrophil granulocytes was found, indicating a marked improvement of myocardial injury after EA treatment. Compared with the sham-operation group, the content of 5-HT was obviously decreased in the hypothalamic PVN region and significantly increased in serum in the model group ($P < 0.01$). After EA intervention, the content of 5-HT was considerably up-regulated in the hypothalamic PVN region and apparently down-regulated in serum in both EA-PC 6 and EA-HT 7 groups in comparison with the model group ($P < 0.01$). No significant differences were found between EA-PC 6 and EA-HT 7 groups in regulating hypothalamic and serum 5-HT levels ($P > 0.05$). CONCLUSION: EA stimulation of both PC 6 and HT 7 can relieve acute ischemic injury of the myocardium in hyperlipidemia rats, which is probably partially related to its effect in promoting the release of 5-HT from the hypothalamic PVN region.



Histological changes of myocardial tissues of rats in each group : de gauche à droite : 1) Sham-operation group: normal cardiac myocytes with clear nuclei, and normal myocardial fibers aligning in good order with uniform dyeing. 2) Model group: cardiac myocyte being swelling , necrosis , with swollen myofibrillar degeneration and necrosis with infiltration of neutrophil granulocytes and interstitial edema. 3) EA-PC 6 group: there were little swellings of the myocardial fibers with no breakage and rare infiltration of neutrophil granulocytes. 4) EA-HT 7 group: like the EA-PC 6 group , there were swellings of the myocardial fibers with a little breakage and a small amount of infiltration of neutrophil granulocytes , indicating much improvement resulting from EA treatment.

6.3. Rythme cardiaque

- Li Xuehui, Gao Xinzhu, Hu Ling. [Experimental Study on Synergetic and Antagonistic Effects of Acupoints “Neiguan”, “Shenmen” and “Xinshu]. Chinese Acupuncture and Moxibustion. 2002;22(12):819. [110266].

  Purpose : To observe synergetic or antagonistic effects between points of similar effects. Methods : Ventricular arrhythmia rabbit model was induced by injection of aconitine, the duration of arrhythmia. was adopted as index and the differences of therapeutic effects of single application and combined application of “Neiguan!' (PC 6), ” Shenmen” (HT 7), “Xinshu” (BL 15) were investigated. Results : Single acupuncture of (PC 6), ” Shenmen“ (HT 7) and ” Xinshu“ (BL 15) has obvious and similar therapeutic effect, and combination of the 3 acupoints. did not significantly increase or decrease the therapeutic effect. Conclusion : The acupoints with similar actions do not have markedly synergetic or antagonistic effects.

- Huang H, Zhong Z, Chen J, Huang Y, Luo J, Wu J, Liao H, Zhen E, Lin R, Fasmer OB, Wik G. Effect of Acupuncture at HT 7 on Heart Rate Variability: An Exploratory Study. Acupunct Med. 2015;33(1):30-5. [182754].

  OBJECTIVE: To explore the effect of acupuncture at HT7 on heart rate variability (HRV) in healthy volunteers. METHODS: 120 subjects were divided into four groups using a random number table. The following groups of acupuncture interventions were used: HT7 verum acupuncture; HT7 non-penetrating sham acupuncture; acupuncture at a sham point; and no acupuncture. HRV was recorded 10 min before, during and after each stimulation using an Actiheart ECG recorder. RESULTS: The HT7 verum acupuncture group had higher very-low frequency, low frequency and high frequency components of HRV compared with the control groups during but not after acupuncture. The HT7 verum acupuncture group also had higher SD of normal intervals compared with the sham needling and no acupuncture control groups.

CONCLUSIONS: Our preliminary study suggests, subject to limitations, that acupuncture at HT7 could affect cardiac autonomic neural regulation in healthy subjects, manifest as increased HRV, most likely via the parasympathetic system.

6.4. Démence

- Lai XS, Huang Y. [Comparative Study on Therapeutic Effects of Baihui (GV 20), Shuigou (GV 26) and Shenmen (HT 7) in Treatment of Vascular Dementia]. Chinese Acupuncture and Moxibustion. 2005;25(8):559-63. [122138].

  OBJECTIVE: To compare the relative characteristics of Baihui (GV 20), Shuigou (GV 26) and Shenmen (HT 7) in treatment of vascular dementia. METHODS: Fifty cases of vascular dementia (VD) were divided into 5 groups randomly. The patients in the group A were treated by acupuncture at routine acupoints. Besides the routine acupoints of the group A, Baihui (GV 20), Shuigou (GV 26) and Shenmen (HT 7) were added to treat the patients in group B, C, D, respectively, while Baihui, Shuigou and Shenmen were added to the group E. The clinical symptoms and signs were observed. RESULTS: Baihui and Shenmen can improve memory, orientation, reaction, obstinacy and trance of VD patients. Baihui is good at helping the patients to understand, calculate and adapt the society. Shuigou is good at improvement of sleeping, slow reaction, trance and memory of the patients. The combination of Baihui, Shuigou and Shenmen can generally promote intelligence level and society adaptive ability. CONCLUSION: Baihui, Shuigou and Shenmen have own characteristics in improving clinical signs and intelligence of patients of VD, and the combination of the 3 acupoints has the best effect in treating VD.

- Huang Yong, Chen Jing, Lai Xin-Sheng, Tang An-Wu, Li Dong-Jiang. Effects of Needling in Baihui (DU 20), Shuigou (DU 26) and Shenmen (HT 7) on Glucose Metabolism in the Lentiform Nuclus in Patients with Vascular Dementia. J First Mil Med Univ. 2005;25(11):1405. [145611].
- Huang Y, Lai XS, Tang AW. Comparative Study of the Specificities of Needling Acupoints DU 20, DU 26 and HT 7 in Intervening Vascular Dementia in Different Areas. Chin J Integr Med. 2007;13(2):103-8. [146494].

  OBJECTIVE: Using methods of clinical scale assessment and cerebral functional imaging to compare the relative specificity of needling acupoints Baihui (DU20), Shuigou (DU26) and Shenmen (HT7) in intervening vascular dementia (VD) in different areas in the brain. METHODS: Fifty patients with VD were randomized into 5 groups. Needling on conventionally used acupoints of hand and foot three Yang-meridians aiming at hemiplegia was applied to the patients in Group A, and needling on DU20 to Group B, on DU26 to Group C, on HT7 to Group D and on all the three to Group E was applied additionally. Assessments of Mini Mental State Examination (MMSE), Activities of Daily Living (ADL) and Family Attitude Questionnaire (FAQ) were made. And the positron emission computerized tomography (PET) and single photon emission computerized tomography (SPECT) examinations were conducted in 5 selected patients from each group before and after treatment. RESULTS: Needling on conventional acupoints plus DU20 could effect the inner temporal system, thalamencephalon system and prefrontal cortical system to improve memory and executive capacity of VD patients; conventional acupoints plus DU26 could effect more to the prefrontal cortical system to obviously elevate the executive capacity; that plus HT7 would reveal an effect similar to but rather weaker than plus DU20, and effect more to memory; and that plus all the three simultaneously could effect rather roundly multiple aspects of the nervous system related to intellectual activities, to elevate the recognition and enhance the executive capacity. CONCLUSION: Needling on various acupoints like DU20, DU26 and HT7 have effects on different brain areas.

- Chen J, Wang S, Huang Y, Shi N, Li Q. Effect of Needling Baihui (DU20), Shuigou (DU26) and Shenmen (HT7) on 18FDG Pet Cerebral Function Imaging in Vascular Dementia Patients. International Journal Of Clinical Acupuncture. 2007;16(2):99. [151973] Traduction de Chen J, Huang Y, Wang SX, Li QS, Liang YJ, Guo YN. [18FDG PET Cerebral Function Imaging in 10 Vascular Dementia Patients Receiving Needling at Baihui (DU 20), Shuigou (DU 26) and Shenmen (HT 7)]. Nan Fang Yi Ke Da Xue Xue Bao. 2006;26(5).

  Objective: To observe the effect of needling Baihui (DU20), Shuigou (DU26) and Shenmen (HT7) on glucose

metabolism in different regions of the brain in patients with vascular dementia (VD). Method: Ten patients suffering from vascular dementia were divided into 2 groups randomly. Patients in the control group received needling treatment at the routine acu-points for hemiplegia (acu-points were chosen from the 6 Yang Meridians of the Hand and Foot). Patients in the treatment group received the same treatment with the addition of 3 acupoints chosen especially to treat dementia: Baihui (DU20), Shuigou (DU26) and Shenmen (HT7). All of the patients were examined by positron emission tomography (PET) in order to detect the glucose metabolism in different regions of the brain before and after acupuncture treatment. A semi-quantitative analysis was used to compare the average glucose metabolisms of different cerebral regions of interest before and after treatment. Result: The addition of the 3 acu-points, Baihui (DU20), Shuigou (DU26) and Shenmen (HT7), obviously increased the glucose metabolism of VD patients in the bilateral frontal lobes and thalamus, temporal lobe and lentiform nucleus in the healthy side. Conclusion: The effect of treating VD by needling Baihui (DU20), Shuigou (DU26) and Shenmen (HT7) has a close relationship with its ability to improve cerebral glucose metabolism.

- Zhang An-Ren, Pan Zhi-Wei, Luo Fei, et al. Effect of Acupuncturing Houxi (SI 3) and Shenmen (HT 7) in Treating Cerebral Traumatic Dementia. Chinese Journal of Integrated Traditional and Western Medicine (english edition). 1996;2(4):262. [103862].

  Sixty-two cerebral traumatic patients were randomly divided into two groups: acupuncture group (32 cases) and physiotherapy group (30 cases). The changes of mini-mental status examination (MMSE) scores and auditory evoked potential P300 were observed before and after treatment. Results: the markedly effective rate and the total effective rate of the acupuncture group were 46. 9 % and 81.3 % respectively, which were significantly icantly higher than that of. 10 - 0 % and 30. 0 % of the physiotherapy group (P < 0. 01). It was found that after treatment the above-mentioned indexes in the acupuncture group changed significantly (P < 0. 05 - 0. 001), while in the physiotherapy group they were not (P > 0. 05). The therapeutic effect fect in acupuncture group was better than that in physiotherapy group (P < 0. 001) . The results confirmed irmed that the cognitive function of cerebral traumatic dementia patients was enhanced effectively after acupuncturing Houxi (S13) and Shenmen (HT7).

6.5. Séquelles d’infarctus cérébral

- Yan. [Effect of Electroacupuncture at Neiguan (PC6) and Shenmen (HT7) on Heart Rate Variability in Patients with Post-cerebral-infarction Sequelae]. Shanghai Journal of Acupuncture and Moxibustion. 2015;34 (12):1181. [187528].

  Objective To observe the effect of electroacupuncture at Neiguan (PC6) and Shenmen (HT7) on heart rate variability (HRV) in patients with post-cerebral-infarction sequelae. Method Eighty patients were randomized into two groups, 40 cases in each group. The control group was intervened by anti-platelet aggregation and other ordinary symptomatic treatment based on Westem medicine, while the treatment group was by electroacupuncture at Neiguan and Shenmen in addition to the treatments given to the control group. Result There were no significant differences in comparing the HRV indexes between the two groups before intervention (P>0. 05); while the HRV indexes in the treatment group were superior to that in the control group after intervention (P < (0. 05). HRV indexes were improved after intervention in the treatment group (P<0. 05); ofthe indexes, only SDNN was improved after intervention in the control group (P< 0. 05), and the rest indexes were insignificantly changed (P> 0. 05). Conclusion Electroacupuncture at Neignan and Shenmen can significantly reduce HRV in patients with post-cerebral infarction sequelae.

6.6. Stress

- Chan J et al. An Uncontrolled Pilot Study of HT 7 for “Stress”. Acupuncture Med. 2002;20(2-3):74-7. [12355].

  Bilateral acupuncture needling at HT7 was an effective method for reducing the rating of 'psychological stress' in 16 out of of a group of 17 volunteers (94%), recruited from staff in a hospice. Ratings were made

using the Edinburgh Postnatal Depression Scale (EPDS), which was felt to be the most useful scale of those considered, despite not being validated in this population. Four brief acupuncture sessions were performed at weekly intervals. The greatest fall in the EPDS scores was observed within the first two treatments. At the end of the study, there was an average reduction of 44% in the EPDS scores. Further research is needed, including a suitable control group, to determine whether the effect observed in this study was a specific effect of needling at HT7.

6.7. Insomnie

- Wang Zhijie, Hu Xiaoyang, Su Jing et al. The efficacy and safety stimulating a single acu-point shenmen (HT 7) for managing insomnia: A systematic review of randomized controlled trials. European Journal of Integrative Medicine. 2017;15:17-22. [206092]. doi

Introduction	Insomnia can occur independently or in conjunction with other diseases, with the common symptom of poor sleep quantity and/or decreasing time asleep. In Chinese medicine, the acu-point HT7 along heart meridian is a very important acu-point for treating insomnia, however no systematic reviews have been carried out to evaluate the effectiveness of stimulating HT7 as a single point for treating insomnia.
Methods	A literature search of English and Chinese databases was carried out for randomized controlled trials evaluating the stimulation of HT7 as a sole acu-point for insomnia (irrespective of cause) compared with routine care or placebo. Trial reporting quality was assessed using the Standards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA) checklist and the Cochrane Risk of Bias Tool (PROSPERO registration numner: CRD42016036191).
Results	**Four trials involving 436 participants** were included. All trials were limited in their reporting and methodological quality. Statistically significant improvements were shown for HT7 simulation used for patients with insomnia who had coronary heart disease (measured by improvement ratio), and the simulation included acupressure ($P < 0.05$) and moxa ($x2 = 18.98$, $P < 0.01$); Statistically improvements were shown for HT7 acupressure used for insomnia occurred independently (measured by anxiety questionnaires – a sensation of wellbeing and urinary sulphate-melatonin evaluation). No trial reported any adverse events.
Conclusions	There was insufficient evidence to confirm whether HT7 stimulation could improve insomnia but there are some positive indications which warrant further research. These findings should be interpreted with caution due to the poor reporting and methodological quality of included trials.

- Bai Yan, Jin Chun-Yi, Dong Gui-Rong. [Clinical Observation of 56 Patients with Insomnia treated by Acupuncture at Shenmen (HT 7)]. Journal of Clinical Acupuncture and Moxibustion. 2004;20(4):41. [127651].
- Nordio M, Romanelli F. Efficacy of Wrists Overnight Compression (HT 7 Point) on Insomniacs: Possible Role of Melatonin. Minerva Med. 2008;99(6):539-47. [152500].

  AIM: Insomnia is a major problem which decreases life quality. Many causes are involved with it and anxiety is often associated. The underlying mechanism is not completely understood, even though different factors seem to be associated. Among them melatonin and its circadian rhythm is thought to have an important role. In addition, acupressure and acupuncture are known to ameliorate insomnia and anxiety, when a specific wrist point is stimulated (HT 7 Shenmen). With these bases, the aim of the present study has been to evaluate the efficacy of an acupressure device, `H7-insomnia control`, positioned on HT 7 points, during the night, in terms of general health and anxiety levels, together with the evaluation of sleep quality and the urinary melatonin metabolite 6-hydroxymelatonin sulphate determination, in a number of insomniacs. METHODS: Forty patients with insomnia were divided into two groups and randomly received either the H7 or placebo treatments, in a double-blind protocol, for 20 nights. Before and after treatments every subject answered a series of questionnaires (General Health Questionnaire 28 items; State-Trait

Anxiety Inventory; Pittsburgh Sleep Quality Index) and collected 24 h urines, divided into two samples of 12 h each. Urinary melatonin metabolite was then determined using a RIA method. RESULTS: Data obtained indicate that the device H7-insomnia control is efficacious to ameliorate quality of sleep and reduce anxiety levels in insomniacs, at a higher extent than in the placebo group. In addition, the 24 hours urinary melatonin metabolite rhythm, obtained at the end of treatment, was considered as being normal in a higher percentage of H7-treated patients, with respect to the placebo group. CONCLUSION: It is plausible to hypothesize that the wrist acupressure device might be considered a valid tool, without adverse effects since it does not contain pharmaceutical products, that is able to naturally ameliorate sleep quality in insomniacs, acting through a not jet completely clarified mechanism, that may involve melatonin.

- Cerrone R, Giani L, Galbiati B, Messina G, Casiraghi M, Proserpio E, Meregalli M, Trabattoni P, Lissoni P, Gardani G.. Efficacy of HT 7 Point Acupressure Stimulation in the Treatment of Insomnia in Cancer Patients and in Patients Suffering from Disorders other than Cancer. Minerva Med. 2008;99(6):535-7. [152501].

  AIM: The induction of sleep would depend on interaction between gabaergic system and the pineal gland through its main hormone melatonin. Until few years ago benzodiazepines were the only drugs effective in the treatment of insomnia. Recently, however, both melatonin and acupressure have appear to be active in sleep disorders. The aim of study was to evaluate the efficacy of HT 7 point acupressure in insomnia. METHODS: The study enrolled 25 patients affected by sleep disorders, 14 of whom had a neoplastic disease. They were treated by HT 7 stimulation for al least two consecutive weeks using a medical device named H7 Insomnia Control. RESULTS: An improvement in the quality of sleep was achieved in 15/25 (60%) patients, with a more evident efficacy in cancer patients (11/14 [79%]). CONCLUSION: This study confirms previous clinical data showing the efficacy of acupressure in the treatment of sleep disorders, particularly in cancer-related insomnia.

6.8. Depression

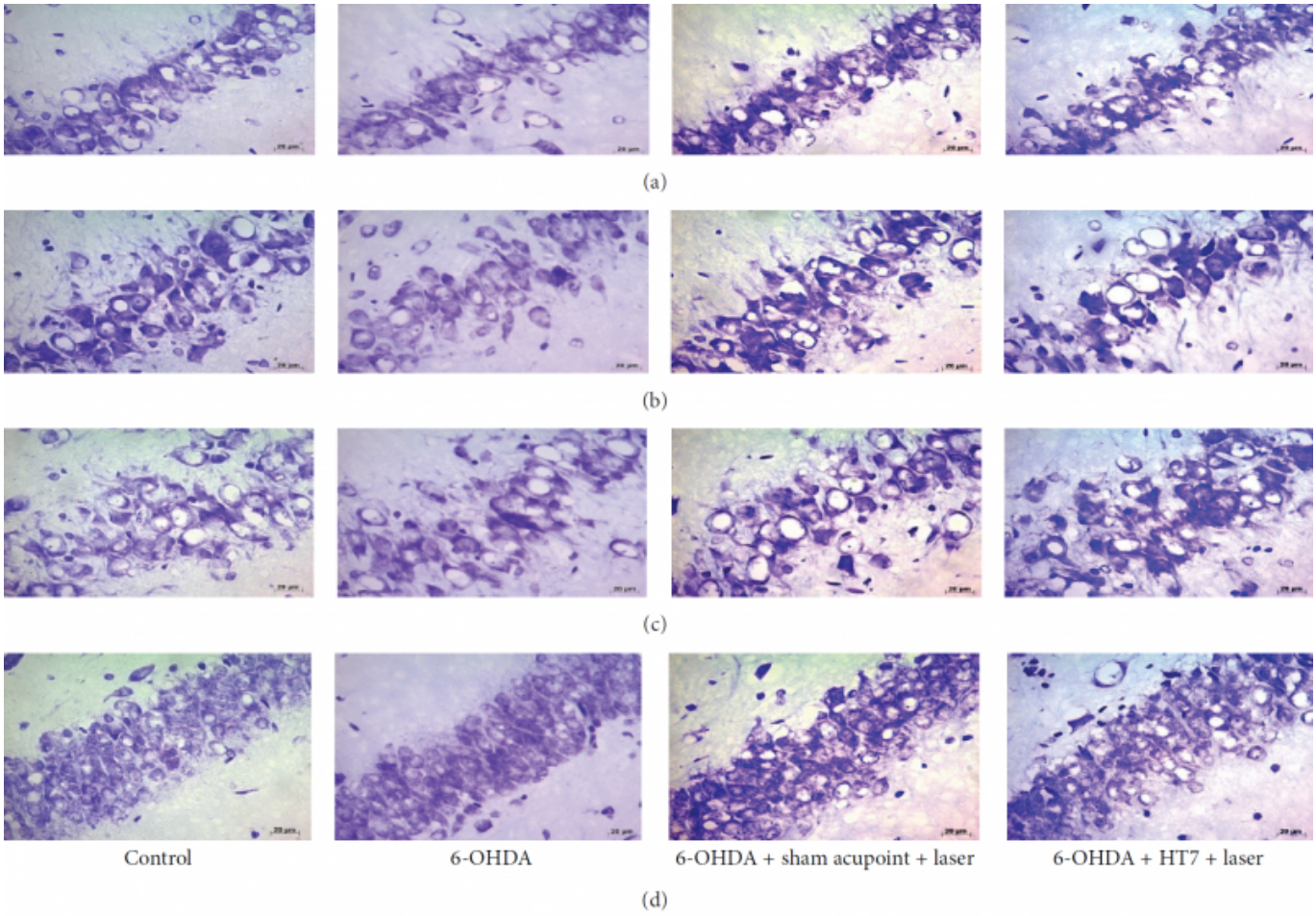
- Park H, Yoo D, Kwon S, Yoo TW, Park HJ, Hahm DH, Lee H, Kim ST. Acupuncture Stimulation at HT 7 Alleviates Depression-Induced Behavioral Changes via Regulation of the Serotonin System in the Prefrontal Cortex of Maternally-Separated Rat Pups. J Physiol Sci. 2012;62(4):351-7. [166326].

  A possible application of acupuncture in alleviating depression-like behavioral changes and regulating serotonin signaling in the prefrontal cortex (PFC) of maternally-separated rat pups was investigated in this study. On postnatal day 15, rat pups were maternally-separated and received acupuncture stimulation at acupoint HT7 or ST36 once a day for 7 days. On postnatal day 21, the tail suspension test was performed and the PFC was harvested. Tissue levels of serotonin (5-HT) and 5-hydroxyindole-3-acetic acid (5-HIAA) were then measured by high-performance liquid chromatography and expression of serotonin transporter (5-HTT) and brain-derived neurotrophic factor (BDNF) were assessed by western blotting. Levels of 5-HT and 5-HIAA were not significantly changed, but the 5-HIAA/5-HT ratio was significantly increased by maternal separation. The immobility time of maternally-separated rat pups was increased, and increased 5-HTT expression and reduced BDNF level were observed in the PFC. But acupuncture stimulation at HT7 alleviated the behavioral change and regulated the changes of 5-HIAA/5-HT ratio, 5-HTT, and BDNF. In conclusion, acupuncture stimulation at HT7 can relieve maternal separation-induced changes, and we propose that regulation of the 5-HIAA/5-HT ratio and of 5-HTT expression by acupuncture stimulation are important acupuncture-induced benefits in this animal model of depression.

6.9. Parkinson

- Wattanathorn J, Sutalangka C. Laser Acupuncture at HT 7 Acupoint improves Cognitive Deficit, Neuronal Loss, Oxidative Stress, and Functions of Cholinergic and Dopaminergic Systems in Animal Model of Parkinson's Disease. Evid Based Complement Alternat Med. 2014. [174825].

To date, the therapeutic strategy against cognitive impairment in Parkinson's disease (PD) is still not in satisfaction level and requires novel effective intervention. Based the oxidative stress reduction and cognitive enhancement induced by laser acupuncture at HT7, the beneficial effect of laser acupuncture at HT7 against cognitive impairment in PD has been focused. In this study, we aimed to determine the effect of laser acupuncture at HT7 on memory impairment, oxidative stress status, and the functions of both cholinergic and dopaminergic systems in hippocampus of animal model of PD. Male Wistar rats, weighing 180-220 g, were induced unilateral lesion at right substantianigra by 6-OHDA and were treated with laser acupuncture continuously at a period of 14 days. The results showed that laser acupuncture at HT7 enhanced memory and neuron density in CA3 and dentate gyrus. The decreased AChE, MAO-B, and MDA together with increased GSH-Px in hippocampus of a 6-OHDA lesion rats were also observed. In conclusion, laser acupuncture at HT7 can improve neuron degeneration and memory impairment in animal model of PD partly via the decreased oxidative stress and the improved cholinergic and dopaminergic functions. More researches concerning effect of treatment duration are still required.



Photographic image of neurons with cresyl violet stained in various subregions of hippocampus. (a) CA1, (b) CA2, © CA3, and (d) dentate gyrus (Wattanathorn 2014).

6.10. Alzheimer

- Lai X, Ren J, Lu Y, Cui S, Chen J, Huang Y, Tang C, Shan B, Nie B.

  Effects of acupuncture at HT7 on glucose metabolism in a rat model of Alzheimer's disease: an 18F-FDG-PET study. Acupunct Med. 2015. [185150]. OBJECTIVE: To explore the effects of acupuncture at HT7 on different cerebral regions in a rat model of Alzheimer's disease (AD) with the application of 18F-2-fluoro-deoxy-D-glucose positron emission tomography (FDG-PET). METHODS: Sixty Wistar rats were included after undergoing a Y-maze electric sensitivity test. Ten rats were used as a healthy control group. The remaining 50 rats were injected stereotaxically with ibotenic acid into the right nucleus basalis magnocellularis and injected intraperitoneally with D-galactose. AD was successfully modelled in 36 rats, which were randomly

divided into three groups (n=12 each): the AD group, which remained untreated; the AD+HT7 group, which received 20 sessions of acupuncture at HT7 over 1 month; and the AD+Sham group, which received acupuncture at a distant non-acupuncture point. Total reaction time (TRT) was measured by Y-maze and 18F-FDG-PET scans were conducted on day 1 and 30. PET images were processed with Statistical Parametric Mapping 8.0. RESULTS: Pre-treatment, TRT was greater in all AD groups versus controls (mean±SD 24.10±2.48 vs 41.34±5.00 s). Post-treatment, TRT was shortened in AD+HT7 versus AD+Sham and AD groups ($p<0.0001$, two-way analysis of variance). Glucose metabolic activity in the hippocampus, thalamus, hypothalamus, frontal lobe, and temporal lobe was decreased in AD rats compared with healthy controls and relatively elevated after HT7 acupuncture. Compared with sham acupuncture, HT7 needling had a greater positive influence on brain glucose metabolism. CONCLUSIONS: Needling at HT7 can improve memory ability and cerebral glucose metabolic activity of the hippocampus, thalamus, hypothalamus, and frontal/temporal lobes in an AD rat model.

6.11. Mécanismes cérébraux

6.11.1. IRM

Articles connexes: - imagerie fonctionnelle cérébrale -

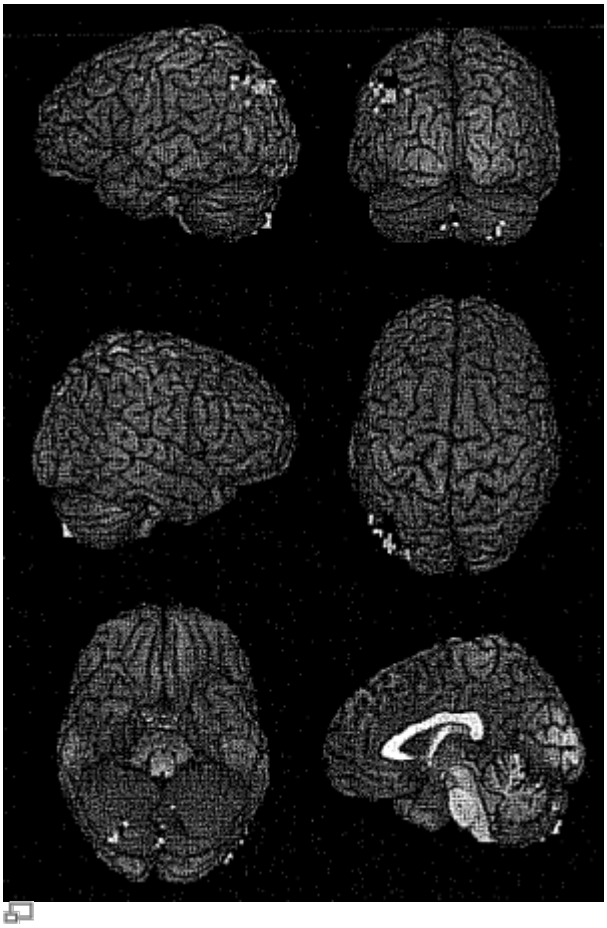
- Fu Ping, Jia Jian-Ping, Wang Wei, et al. [Effects of Electroacupuncture at Neiguan (PC 6) and Shenmen (HT 7) on Brain Functional Imaging]. Chinese Acupuncture and Moxibustion. 2005;25(1):61. [136914].

  Objective To observe effect of electroacupuncture at Shenmen (HT 7) and Neiguan (PC 6) on brain functional imaging. Methods The technique of functional magnetic resonance imaging was used to observe the activated state in different brain regions caused by electroacupuncture. Results The frontal lobe was activated by electroacupuncture at Neiguan (PC 6) and the temporal lobe by Shenmen (HT 7). Conclusion Electroacupuncture at different acupoints can activate different brain regions, which provides objective basis for treatment of intellectual impairment by electroacupuncture at Neiguan (PC 6) and Shenmen (HT 7).

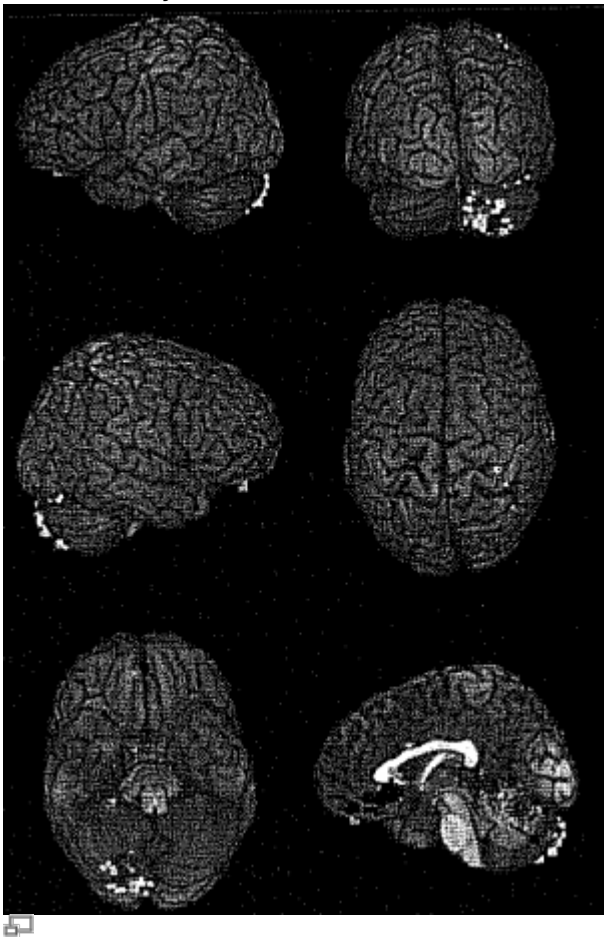
- Chen SJ, Liu B, Fu WB, Wu SS, Chen J, Ran PC. [A FMRI Observation on Different Cerebral Regions Activated by Acupuncture of Shenmen (HT 7) and Yanglao (SI 6)]. Acupuncture Research. 2008;33(4):267. [151052].

  OBJECTIVE: To observe the influence of acupuncture of Shenmen (HT 7) and Yanglao (SI 6) on neuro-images in different cerebral regions in volunteer subjects. METHODS: Twelve healthy young volunteer participants were enrolled in this research. fMRI scans were taken in random order in a block design (one for baseline and two for acupuncture stimulations). During stimulation phase, an acupuncture needle inserted in right HT7 or S16 was twirled at an angle of 180 degrees and a frequency of about 1.5 Hz for 35. 6 ms. Main parameters for fMRI were TR/TE/FA = 3560 ms/50 ms/90 degrees. Acupuncture sensations were evaluated by means of visual analog scale (VAS). The collected images were analyzed by using SPM 2 for exploring inter-group differences in blood oxygen level dependent (BOLD) responses. RESULTS: When manipulating the needle, both the operator and the subject had a feeling of Deqi. Increases in BOLD signal (group analysis, corrected, 0.05, K > or =10) were found mainly in right postcentral gyrus of frontal lobe (BA 2, BA 1, BA 43), left inferior frontal gyrus (BA 47), secondarily, in the right inferior parietal lobule (BA 40), right inferior frontal gyrus (BA 44), left superior temporal gyrus (BA 22) and right insula (BA 40) after acupuncture at HT7; and chiefly in left inferior parietal lobule (BA 40), right inferior frontal gyrus (BA 45, BA 46), secondarily in the left middle temporal gyrus and inferior temporal gyrus (BA 37) as well as the left superior frontal gyrus (BA 10) after acupuncture of S16. CONCLUSION: Acupuncture of HT7 and SI6 elicite different BOLD responses in some related cerebral regions.

- Wu ZJ, Cai RL, Xu CS, Hu L, He L, Hu WB, Li CF, Zhou YP. [Study on the Relative Specificity of the Heart and Lung Meridians in Brain with fMRI]. Chinese Acupuncture and Moxibustion. 2011;31(6):529-34. [161839].



Acupuncture on the left Shenmen (7C) of the brain activity area 3D

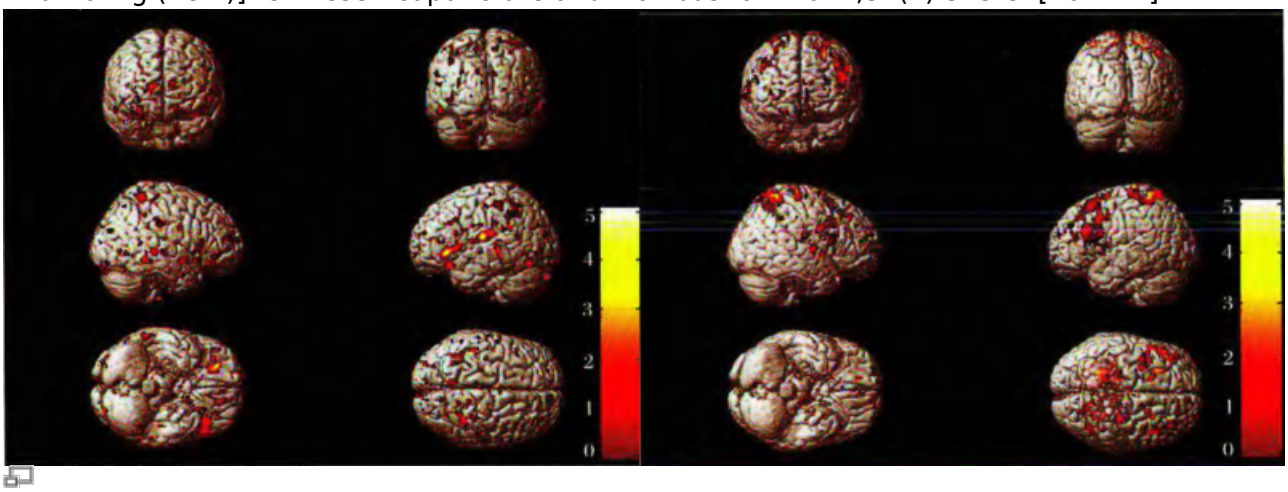


Acupuncture on the left side of the Taiyuan

(9P) acupoints

> OBJECTIVE: To study the central modulation mechanism on the relative specificity of the Heart and Lung Meridians and to provide the experimental evidence for deeply study on correlation between meridian-viscera and brain. METHODS: Ten healthy students in Anhui College of TCM were chosen and a modified block design was adopted. After 32 time points of resting and 32 of rotation needling, then 48 of resting and 32 stimulating, and 16 resting time points, functional imagings were collected at last. All the process would last for 10 min 44 sec. Acupuncture work was finished by one acupuncturist with extensive experience by acupuncture at the left Shenmen (HT 7) or Taiyuan (LU 8) with the disposable sterile stainless steel needle, and uniform reinforcing-reducing method was used with frequency of 1 Hz and depth of 1.0 cm. After the experiment, the sensation of acupuncture and the other feeling or psychic process were inquired and recorded detailedly. These data were analyzed by AFNI software. RESULTS: Acupuncture at Taiyuan (LU 8) could excite the contralateral frontal lobe, apical lobe, cerebral ganglion, VI, VIII areas and inferior semilunar lobule of cerebellum, and restrain bilateral callosal gyrus and homolateral gyrus rectus. Acupuncture at Shenmen (HT 7) could excite the contralateral IV-VIII areas of cerebellum, and homolateral VI, VII areas of cerebellum, and restrain parts of homolateral apical lobe. CONCLUSION: Acupuncture at Shenmen (HT 7) of the Heart Meridian and Taiyuan (LU 8) of the Lung Meridian can excite or restrain different brain areas, indicating that there are relatively specific corresponding brain areas for the Heart Meridian and Lung Meridian.

- Li ZJ, Sun ZR, Sun CY, Tong X. [Study on Specificity of Acupuncture Effect of Shenmen (HT 7) And Daling (PC 7)]. Chinese Acupuncture and Moxibustion. 2012;32(4):325-8. [162227].



Etude comparative des zones activées par 7C à gauche et par 7MC à droite (Li 2012)

> OBJECTIVE: To observe the effect of acupunture at Shenmen (HT 7) and Daling (PC 7) on different cerebral functional regions by Functional Magnetic Resonance Imaging (MRI), and discuss the relative specificity of effect of these two acupoints. METHODS: Ten healthy right-handed volunteers were enrolled in this research. Under the scan of fMRI with the pattern of “rest-stimulation-rest-stimulation-rest”, acupuncture stimulation was given at Shenmen (HT 7) and Daling (PC 7) on the right side, and all the data were analyzed with Matlab software and SPM5 package to observe the activated cerebral regions. RESULTS: The activated brodmann areas by acupuncture at Shenmen (HT 7) were mainly BA10 BA13, BA47, BA22 on the left side and BA40 BA44 on the right side, while the activated areas by acupunoture at Daling (PC7) were BA46, BA47, BA22 BA10. BA45 on the left side and BA44 BA9, BA6. BA40 on the right side. CONCLUSION: The activated cerebral functional regions of acupuncture stimulation at Shenmen (HT 7) and Daling (PC 7) are not exactly the same, which indicates that the acupuncture effects of the two acupoints are specific. With the same activated areas of language and cognitive function, the **Shenmen (HT 7) specializes in emotion control** while the **Daling (PC 7) could active the autonomic nerve function area**.

6.11.2. Potentiels évoqués

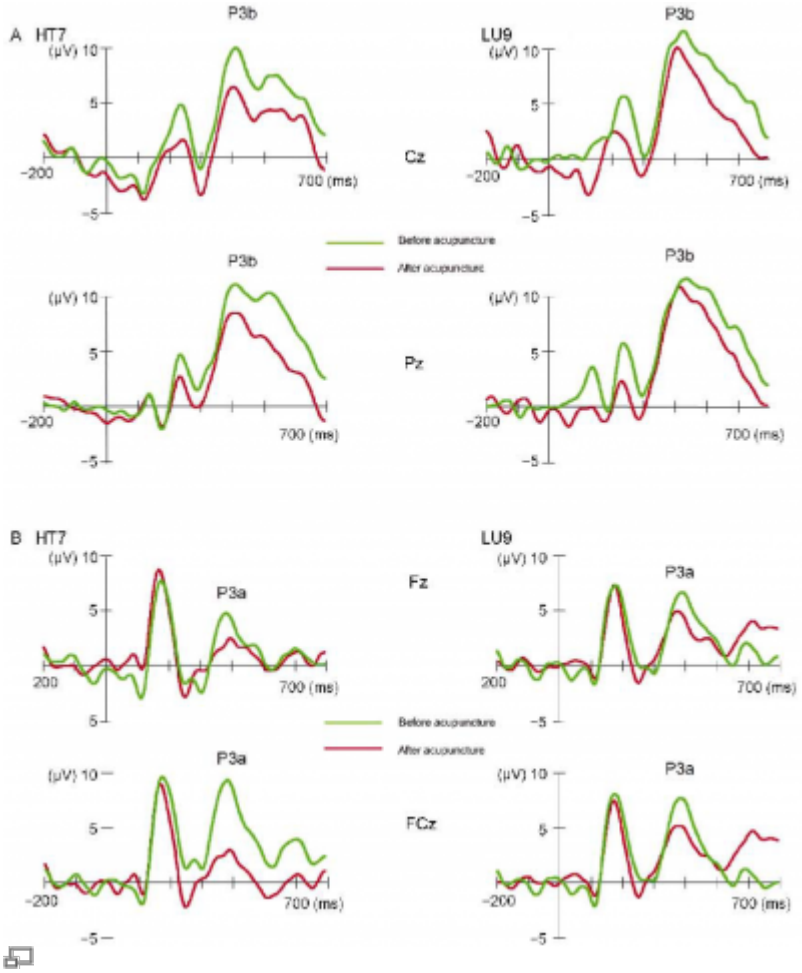
- Abad-Alegria F, Melendo Ja, Prieto M, Martinez T. Somatosensory evoked potential elicited by acupoint's stimulus. Clinical EEG. 1995. 26:219-24. [135994].

Based on the observation that repeated acu-point stimulation elicits evoked potentials whose latency varies as a result of the stimulus intensity we assessed the evoked potential elicited by ;stimulus of three acupoints (*Hegu*, *Shenmen* and *Houxi*), comparing the results to the potentials produced by median nerve stimulus and nonacupunctural point. Fourteen healthy individuals were studied, and no modifications related to the amount of stimuli were found in the N1-P1 amplitude of the potentials. The Ni latency of the *Hegu* and *Shenmen* point potentials increased with the amount of stimuli, until it reached a plateau at around 400 stimuli. It did not vary for *Houxi* and the nonacupunctural point. We conclude that the somesthesic afference from acupunctural points must involve control circuits that are quantitatively different for each point.

- Geng Y, Zhang X. EEG EPS Analysis of Magnetic Stimulation on Acupoint of Shenmen (HT 7). Conf Proc IEEE Eng Med Biol Soc. 2012;:5745-8. [165658].

  Acupuncture is a useful irritation therapy clinically. Acupuncture at acupoints is proved to have specific function on human body. Magnetic stimulation is a new kind of stimulating technique of non-invasive, painless and effective. The effect of magnetic stimulation on acupoint is a new subject in recent years. In this paper, the electroencephalogram (EEG) evoked potentials (EPs) of magnetic stimulation by stimulating the acupoint of Shenmen(HT7) are studied. The experiments are divided into four groups: quiet, acupoint stimulation, mock stimulation and mock point stimulation. The EEG EPs are collected and an obvious P150 component is obtained. The amplitudes of P150s are analyzed and compared. The P150s are localized in brain by dipole model and the coronal, sagittal and axial plans are painted and observed. The results show that acupoint stimulation on acupoint of Shenmen(HT7) can evoke stronger nerve activity of somatosensory than stimulation on common surface. The dipole source of acupoint stimulation and common surface stimulation are both focused on the cingulated gyrus which related to somatosensory.

- Cai RL, Hu L, Wu ZJ, Wang KM, He L, Zhou YP, Zhao L, Hu WB. [Effects of Acupuncture at Shenmen (HT 7) or Taiyuan (LU 9) on P3a and P3b of Event-Related Potentials in Healthy Young Adults]. Zhong Xi Yi Jie He Xue Bao. Journal Of Chinese Integrative Medicine. 2012;10(1):48-53. [166138].

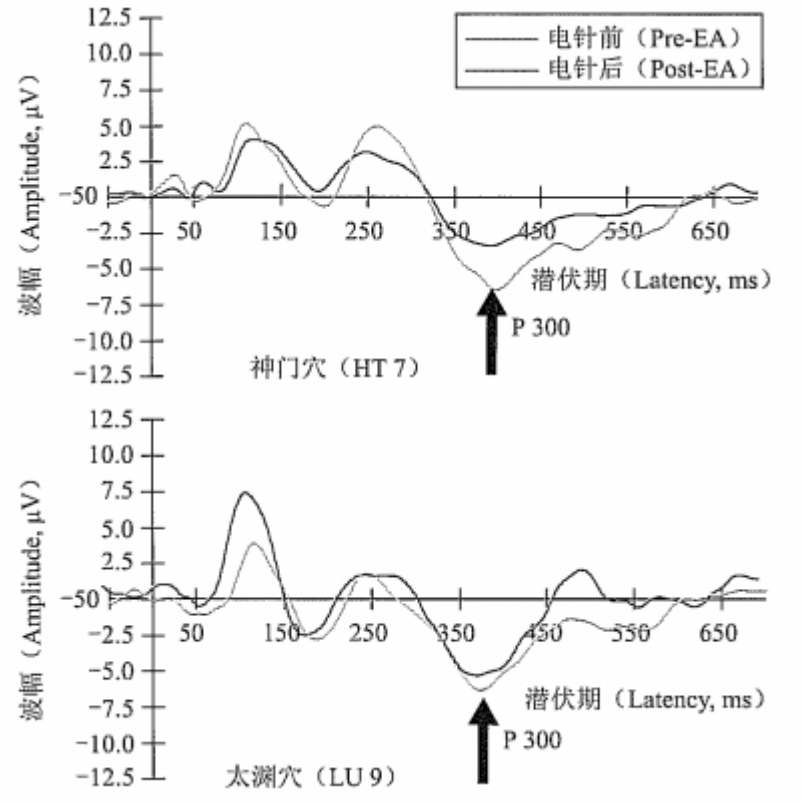


Etude comparée des potentiels évoqués de l'acupuncture des

points 7C et 9P (Cai 2012)

OBJECTIVE: To investigate the effects of manual acupuncture at Shenmen (HT7) or Taiyuan (LU9) on the attention function of the brain, and to lay an experimental foundation for researching brain function and integration mechanisms of the human brain in relation to acupuncture stimulation. METHODS: Ten healthy young college students were selected as experimental subjects. P3a and P3b potentials were induced by novel stimulation and target stimulation with vision and were observed using Neuroscan event-related potentials system at time windows of ms 330-430 or 400-600 ms for observing the change of intensity distribution of P300 after manual acupuncture at HT7 or LU9. RESULTS: The amplitude of P3a and P3b decreased significantly after manual acupuncture at HT7 or LU9, but the degree of decreases affected by the acupoints was different. The decrease of the amplitude of P3a due to acupuncture at HT7 was more significant than acupuncture at LU9 ($P<0.05$). CONCLUSION: The attention function of the brain is affected by manual acupuncture at HT7 or LU9 and manual acupuncture at HT7 has a greater influence on the attention function of the brain.

- Hu WB, Hu L, Dong CY, Cai RL, Zhou YP, Wang KM, Zhang C, Zhou F. [Comparative Study on Effects of Electroacupuncture Stimulation of Shenmen (HT 7) and Taiyuan (LU 9) on P 300 of Event-Related Potentials and Brain Electrical Activity Mapping in Healthy Young Adults. Acupuncture Research. 2013;38(3)P:186-91. [164625].



Comparaison des potentiels évoqués de l'électrostimulation de 7C et 9P (Hu 2013)

OBJECTIVE: To observe the effect difference of electroacupuncture (EA) stimulation of Shenmen (HT 7) and Taiyuan (LU 9) on P 300 of event-related potentials (ERPs) in volunteer subjects, so as to explore functional specificity of acupoints in processing cerebral information. METHODS: Sixty healthy volunteer college students were randomly and equally divided into Shenmen (HT 7) group and Taiyuan (LU 9) group (30 persons/group). EA (2 Hz, 1 mA) was applied to bilateral Shenmen (HT 7) and Taiyuan (LU 9) for 15 min. The ERPs were acquired by averaging EEG activity following Oddba II auditory tone-double stimuli and brain electrical activity mapping (BEAM) acquired by means of Scan 4.5 collection and analysis system. Data were calculated and analyzed with SPSS 17.0 for Windows. After testing, the subjects were inquired about the perception for acupuncture stimulation and other sensations or psychological activities. RESULTS: Following EA stimulation of both HT 7 and LU 9, the amplitude of P 300 in the ERPs were significantly decreased in comparison with pre-EA stimulation in the same one group ($P < 0.01$, $P < 0.05$). No significant changes were found in the latencies of P 300 after EA stimulation of both HT 7 and LU 9 ($P > 0.05$). But, EA of HT 7 had a slightly stronger effect in shortening P 300 latency. With regard to the potential intensity distribution of BEAM, there were some differences between HT 7 and LU 9 groups. The high potential responses for HT 7 were found mainly in the occipital lobe, and in the left parietal lobe and the right temporal lobe, whereas those for LU 9 were found to mainly disperse in the left occipital lobe and the parietal lobe. CONCLUSION: EA stimulation of HT 7 and LU 9 has a slight difference on lowering P 300 amplitude of ERPs, and may result in different distribution of the high potential responses in different lobes of the cerebral cortex in healthy subjects. The functional specificity of EA stimulation of different acupoints needs further study.

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