

NECK FORMULA

BAI ZHI GE GEN WAN

ORIGINS: A modification of Pueraria Combination/Kudzu Decoction (*Ge Ge Tang*) from *Discussion on Cold Damage (Shang Han Lun)* circa 220 CE.

Neck Formula (*Bai Zhi Ge Gen Wan*) is a modification of Pueraria Combination/Kudzu Decoction (*Ge Ge Tang*) from *Discussion on Cold Damage (Shang Han Lun)* circa 220 CE.

GENERAL SIGNS/SYMPTOMS

Neck Formula (*Bai Zhi Ge Gen Wan*) is used to treat acute stiffness, tension, pain, or discomfort in the neck, upper back, and shoulder from wind-cold or it can be used with equal efficacy for chronic neck pain and discomfort from wind-cold-damp *bi* syndrome. Secondary signs and symptoms addressed by this formula include nasal congestion, wind-cold headaches, and chills without sweating. Zhang Zhong-Jing recommended the base formula, **Pueraria Combination** (*Ge Gen Tang*) for “*taiyang* disease, when there is stiffness on the nape and the back, absence of sweating, and aversion to wind,”ⁱ and also for diarrhea when there is combination *taiyang* and *yangming* disease.

CLASSICAL ACTIONS

1. Releases the exterior; expels wind and cold
2. Unblocks the *taiyang* and *yangming* channels in the upper body
3. Releases the muscle layer, stops pain
4. Raises yang qi
5. Opens the nose

INGREDIENTS

PINYIN	LATIN	ENGLISH	PERCENT OF FORMULA
<i>Bai Zhi (chief)</i>	<i>Angelicae Dahuricae Radix</i>	Purple Angelica	43%
<i>Ge Gen (chief)</i>	<i>Puerariae Radix</i>	Kudzu Root	20%
<i>Qiang Huo (assistant)</i>	<i>Notopterygii Rhizoma seu Radix</i>	Notopterygium	17%
<i>Chuan Xiong (assistant)</i>	<i>Chuanxiong Rhizoma</i>	Ligusticum Wallichii Rhizome	15%
<i>Gan Cao (envoy)</i>	<i>Glycyrrhizae Radix</i>	Chinese Licorice Root	5%

GENERAL INDICATIONS / MODERN APPLICATIONS

- Arthritic pain, neck or shoulder
- Back pain, wind-cold-damp
- Chills, mild
- Common cold
- Diarrhea, from wind-cold
- Headache, wind-cold or tension
- Influenza, from wind-cold
- Nasal congestion
- Neck pain or stiffness
- Rhinitis
- Shoulder, frozen
- Spondylosis, cervical
- Stiffness, upper body
- Supraorbital pain
- Sweating, absence of
- Urticaria/Hives
- Wind, aversion to

FORMULA DISCUSSION

Neck Formula (*Bai Zhi Ge Gen Tang*) is a modification of the *Shang Han Lun* formula, Pueraria Combination (*Ge Gen Tang*). In 2009, a group of Taiwanese researchers gathered and analyzed data collected by the National Health Insurance in Taiwan between 1999 and 2002 concerning the frequency of prescription of *Shang Han Lun* Formulas.ⁱⁱ They found that the single most commonly prescribed individual *Shang Han Lun* formula was *Ge Gen Tang* (Pueraria Combination). This is certainly not the case in North America, due in no small part to the fact that the original formula contains ephedra (*ma huang*), which is closely regulated by the US Food and Drug Administration and Health Canada and not readily available to most herbalists. Their research showed that the number one reason for prescribing Pueraria Combination (*Ge Gen Tang*) was the treatment of stiff neck or stiff neck in conjunction with nasal congestion. The present formulation represents a strategy to reintroduce this formula without ephedra (*ma huang*) and to emphasize the action of freeing the zone from the nape of the neck up into the occiput and down into the shoulders. The exterior-releasing actions have been de-emphasized in order to strengthen the ability of the formula to invigorate qi, blood and fluids through the target area and to dispel wind-cold-damp pathogens that cause *bi* syndrome.

Stiffness is usually associated with dampness, but in external disease dampness usually manifests as heaviness. In the acute pattern addressed by **Neck Formula** (*Bai Zhi Ge Gen Tang*), which is wind-cold invading the *taiyang* and blocking qi and fluids in the *yangming*, the neck stiffness is the result of blocked qi. Specifically, wind-cold enters *Da Zhui* (Great Hammer) Du-14 just below C-7. *Da Zhui* (Du-14) is a very important point. Along with *Ming Men* (Du-4) the two points control the flow of *wei qi* into the sinew channels. *Ming Men* (Du-4) governs the transformation of yang

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TONGUE

Normal body, white coat, possibly slightly swollen.

PULSE

Floating and tense.

CONTRAINDICATIONS / NOTES

This formula is generally used for acute patterns or during an acute flare of a chronic condition. If taking for an extended period of time, a supplementing formula that addresses the particular constitutional deficiencies of the patient should be prescribed with **Neck Formula** (*Bai Zhi Ge Gen Wan*). If a person has chronic blood heat, this formula may exacerbate lesions; to avoid this complication, persons with chronic blood heat should take with **Rehmannia Cool Blood Formula** (*Tu Fu Ling Sheng Di Huang Wan*).

DOSAGE

For acute cases, high doses (3-5 tablets, 3 or 4 times a day) are sometimes required. This is generally safe if the individual's digestion is strong and the course is limited to 1-5 days. When the digestion is weak, if the course needs to be longer than 5 days, or if the patient has sensitivities, 2-3 tablets, twice a day is recommended.

qi into *wei qi* and its initial release into the sinew channels up through the spine and down into the legs. *Da Zhui* (Du-14) governs the distribution of *wei qi* into the sinew channels as they traverse the upper limbs and head. When wind-cold invades Du-14, it blocks the *wei qi* in these sinew channels. The result is stiffness and pain in the sinews of the upper body.

According to *Shang Han Lun* theory, external cold enters the body first at Du-14. If it remains at Du-14, stiffness at the nape will develop if the body is unable to transform yang qi into sufficient *wei qi* to outthrust the cold. The cold can also begin to spread up over the head and settle into the nose. From the nose it can enter the throat and advance into the chest. The resources of the body may be able to prevent the advancement of cold anywhere along this pathway—or they may fail if the body is in a weakened state. The chief resource required in order for *wei qi* to move is *jin*/thin fluid. **Neck Formula** (*Bai Zhi Ge Gen Wan*) generates and raises fluids into the upper body. The fluids combine with the *wei qi* at Du-14 and distribute along the *taiyang* and *yangming* sinew channels that traverse the neck and head and enter the sensory portals. The influx of fluid—along with the invigoration of qi, blood and fluid—effectively opens the sensory portals and frees the trapped qi, releasing the neck from constraint.

Neck Formula (*Bai Zhi Ge Gen Wan*) was formulated to disperse cold and free the *wei qi* in the channels of the upper body. It also disperses wind-cold-dampness that causes *bi* syndrome and invigorates qi and blood through the nape and shoulders. It can therefore be used for chronic or acute stiff neck, whether caused by climatic factors or stress.

SYNERGY OF INGREDIENTS

Neck Formula (*Bai Zhi Ge Gen Wan*) has two herbs serving as chief: purple angelica (*bai zhi*) and pueraria (*ge gen*). Both are acrid and release the exterior; but purple angelica is warm, while pueraria is cool. Purple angelica (*bai zhi*) is aromatic, which lifts the formula to the upper body, opens the orifices, and dries dampness. Pueraria (*ge gen*) generates fluids to facilitate the flow of *wei qi*. It also raises the clear yang and thus ascends the yang fluids into the upper body. Purple angelica (*bai zhi*) has an analgesic, anti-inflammatory, and mild sedative actions. These all serve to alleviate neck pain when it is due to stress, not just wind-cold. Pueraria (*ge gen*) also has a general analgesic action. The two herbs are frequently combined to enter and release the muscle layer in the neck, occiput and upper back.

Notopterygium (*qiang huo*) and ligusticum (*chuan xiong*) are assistants in the formula. Notopterygium (*qiang huo*) is closely related to angelica pubescens (*du huo*). The old *materia medica* did not distinguish between the two, but since notopterygium (*qiang huo*) is aromatic and angelica pubescens (*du huo*) is not, later physicians began to use the former for treating wind-dampness in the upper body and the latter for wind-dampness in the lower body. As with purple angelica (*bai zhi*), the aromatic property of notopterygium (*qiang huo*) helps to lift the formula upward and penetrate the turbidity and dampness. But while purple angelica (*bai zhi*) and pueraria (*ge gen*) guide the formula primarily to the *yangming* channel—which implies the flesh or muscle layer—notopterygium (*qiang huo*) expands the application to clear wind-cold-damp *bi* syndrome in the *taiyang*. In the present context, *taiyang* refers to the skin, where cold is said to penetrate, and out through which cold is expelled; but the fact that notopterygium (*qiang huo*) enters not only the bladder, but the kidney channel as well, suggests that its actions include the bones and joints of the upper body, where wind-damp-cold settles and becomes *bi* syndrome. Notopterygium (*qiang huo*) is one of the few herbs that can guide a formula to the Governing Vessel (*Du*). That makes it an essential component in a formula that is designed to release pathogens that are thought to have entered the body precisely at Du-14. Ligusticum (*chuan xiong*) is often combined with notopterygium (*qiang huo*) for pain in the upper body, such as wind-cold headache or *bi* syndrome. Ligusticum (*chuan xiong*) is one of the few blood regulating herbs that also strongly expels wind. As a blood regulator, ligusticum (*chuan xiong*) has a strong action to reduce pain and is the most commonly prescribed substance to regulate blood in the upper body.

Licorice root (*gan cao*) serves as envoy. Sometimes the envoy guides the formula's action to a particular part of the body, but in this formula, the other herbs are already performing that function. The other role served by an envoy is to harmonize the ingredients of the formula: to send a message to the body that all these things together should be taken as a unified synergy. Licorice root (*gan cao*) also supports the pueraria (*ge gen*) in the production of fluids and augments the qi.

MODERN APPLICATIONS

Cervical spondylosis – Pueraria Combination (*Ge Gen Tang*) is a very common herbal formula used in modern research to address cervical spondylosis. A research study was conducted to explore the effectiveness of Pueraria Combination (*Ge Gen Tang*) combined with acupuncture for the treatment of cervical spondylosis. 120 patients were randomly divided into two groups. Both groups were treated with acupuncture while the treatment group was also given Pueraria Combination (*Ge Gen Tang*). The Visual Analog Scale (VAS) and Neck Disability Index (NDI) were evaluated to determine treatment effectiveness. The results showed that VAS and NDI scores of the two groups were both lower compared to pretreatment scores, with the treatment group scoring lower than that of the control group. The total effectiveness for the treatment group, using both acupuncture and Pueraria Combination (*Ge Gen Tang*), was 98.33%. This was a statistically significant difference compared to the control group, using acupuncture alone, which had a total effectiveness of 85%.ⁱⁱⁱ

A meta-analysis was done using Pueraria Combination (*Ge Gen Tang*) in the treatment of cervical spondylosis with non-steroidal anti-inflammatory drugs (NSAIDs). The analysis looked at the efficacy of Pueraria Combination (*Ge Gen Tang*) combined with NSAIDs versus NSAIDs alone when treating cervical spondylosis. The outcome of the meta-analysis showed that adding Pueraria Combination (*Ge Gen Tang*) to NSAIDs resulted in a higher cure rate and higher effectiveness rate than using NSAIDs alone.^{iv}

Influenza – A research study was conducted to help better understand the effects of Pueraria Combination (*Ge Gen Tang*) on influenza. An in vitro study showed that Pueraria Combination (*Ge Gen Tang*) had moderate anti-influenza A virus action. The study also indicated that the formula was more effective when given prior to the viral infection, targeting the viral attachment and replication stages, versus the internalization stage. A murine study was done on H1N1 infected mice. The results showed that Pueraria Combination (*Ge Gen Tang*) significantly reduced the influenza virus titers in lung tissue, improved the survival rate, the lung index, and the pulmonary histopathological changes in mice. It was observed that Pueraria Combination (*Ge Gen Tang*) can modulate the immune system, relieving lung inflammation through decreased expression of tumor necrosis factor alpha (TNF- α) and improved T-helper 1 (Th1)/T-helper 2 (Th2) immune balance.^v

Rhinitis – A study was conducted using Chinese medicine for the treatment of allergic rhinitis. 62 cases diagnosed with

allergic rhinitis were treated. The patients were broken into a treatment group of 32 cases using Pueraria Combination (*Ge Gen Tang*) combined with acupuncture point stimulation, and a control group of 30 participants who were treated with cetirizine hydrochloride, an antihistamine. In the treatment group, Pueraria Combination (*Ge Gen Tang*) had additions of xanthium (*cang er zi*), magnolia (*xin yi hua*), and astragalus (*huang qi*). The treatment course was 15 days. Magnets were placed on acupuncture points for six to eight hours. The acupuncture points used included Du-14, UB-12, UB-13, extra point *Bai Lao*, UB-20, UB-23, and ST-36. The curative effect was determined based on symptom control of runny nose, sneezing, nasal congestion, difficulty breathing, and examination of nasal polyp formation. The results showed a 93.75% total effectiveness rate for the treatment group. Of the 32 patients in the treatment group, 22 were deemed cured, eight showed improvement, and two showed no effect. The control group had a total effectiveness rate of 83.33%, with 14 patients deemed cured, 11 patients who “showed improvement,” and five patients showed “no effect.”^{vi}

Stiff neck after sleeping – A study was conducted to observe the effectiveness of Pueraria Combination (*Ge Gen Tang*) combined with acupuncture for the treatment of stiff neck after sleeping, commonly known as “lost pillow neck.” The study took 165 patients and randomly divided them into three groups, an acupuncture group, a Pueraria Combination (*Ge Gen Tang*) group, and a combined acupuncture plus Pueraria Combination (*Ge Gen Tang*) group. After one course of treatment, it was noted that the combination group had significantly better results with improvement in pain, improvement in range of motion, and overall efficacy compared to that of either the acupuncture group or the Pueraria Combination (*Ge Gen Tang*) group alone.^{vii}

Upper respiratory infections – A clinical observation was used to evaluate Pueraria Combination (*Ge Gen Tang*) for the treatment of upper respiratory infections in children. 86 patients were randomly divided into two groups. A treatment group was given Pueraria Combination (*Ge Gen Tang*) with additions; and a control group was given ribavirin throat spray and vitamin C. Pueraria Combination (*Ge Gen Tang*) was modified with gypsum (*shi gao*), platycodon root (*jie geng*), forsythia (*lian qiao*), apricot seed (*xing ren*), bupleurum (*chai hu*), and atracylodes (*bai zhu*). Treatment was given for five days and clinical signs and symptoms were observed. The results showed that the disappearance of signs and symptoms was significantly shorter in the treatment group compared to that of the control group. For fever reduction, the treatment group took 2.08 ± 0.18 days versus the control group that took 2.87 ± 0.29 day. For resolution of cough, the treatment group took 3.19 ± 0.33 days versus the control group that took 4.40 ± 0.41 days. And for resolution of sore throat, the treatment group took 3.04 ± 0.31 days versus the control group that took 4.01 ± 0.42 days.^{viii}

FORMULA COMPARISONS

Juan Bi Formula (*Juan Bi Tang*) & Neck Formula (*Bai Zhi Ge Gen Wan*)

These formulas are similar in their actions and indications. Both can be used to treat conditions involving the upper body. **Juan Bi Formula** (*Juan Bi Tang*) is a modification of the classical formula by the same name that treats wind-damp-cold *bi* with blood stasis in the upper body. It is a generalized formula for the upper body and is more focused on chronic *bi* conditions. The formula treats pain in the areas of the neck, shoulders, upper back, and arms, and is also beneficial for treating numbness in the upper body. You could make the argument that **Neck Formula** (*Bai Zhi Ge Gen Wan*) is more suited to treat the neck and **Juan Bi Formula** (*Juan Bi Tang*) is more suited to treat the shoulder, however differentiation based on pattern rather than location may provide better results. For conditions of the upper body with *taiyang* and *yangming* involvement, use **Neck Formula** (*Bai Zhi Ge Gen Wan*). For acute conditions and early stages of wind-damp-cold *bi*, **Neck Formula** (*Bai Zhi Ge Gen Wan*) is a good choice, but **Juan Bi Formula** (*Juan Bi Tang*) may also be used. For chronic *bi* conditions and for long-term use, **Juan Bi Formula** (*Juan Bi Tang*) is going to be the better suited formula for treatment.

Chase Wind Penetrate Bone Formula (*Zhui Feng To Gu Wan*) & Neck Formula (*Bai Zhi Ge Gen Wan*)

Both of these formulas can address wind-damp-cold *bi*. **Chase Wind Penetrate Bone Formula** (*Zhui Feng To Gu Wan*) is used to treat wind-damp-cold *bi* in the entire body. This formula also moves blood and can be used for acute or chronic conditions, but generally is used for more chronic wind-damp-cold *bi* syndromes. While this formula is more commonly used to address conditions of the back and lower body, it can also treat the upper body, including the neck and shoulder. **Chase Wind Penetrate Bone Formula** (*Zhui Feng To Gu Wan*) has a supportive function and can be more appropriate for long-term use when there is underlying deficiency. **Neck Formula** (*Bai Zhi Ge Gen Wan*) focuses on the upper body and is more suited for early stage wind-damp-cold

bi and neck pain from invasion of wind-cold, wind-damp, or wind-damp-cold.

FORMULA MODIFICATIONS

Neck Formula (*Bai Zhi Ge Gen Wan*) is commonly combined with modalities such as acupuncture, cupping, and moxibustion. Modern research indicates superior outcomes when treatments were combined versus individual therapies alone for chronic neck pain.^{ix,x} A common two herb addition for neck pain includes curcuma (*jiang huang*) plus cinnamon twig (*gui zhi*).

ENDNOTES

- ⁱ Translation by Guohui Liu, Singing Dragon Press, 2016.
- ⁱⁱ Chen FP, Chen FJ, Jong MS, Wang JR, and Hwang SJ, "Modern use of Chinese herbal formulae from *Shang Han Lun*," *Chinese Medical Journal*, 2009, 122(16):1889-1994.
- ⁱⁱⁱ Wang J, "Acupuncture Combined with Ge Gen Tang in the Treatment of Cervical Spondylosis," *Journal of Practical Chinese Medicine*, 2019(11).
- ^{iv} Zou BJ, et al., "Meta-Analysis of Ge Gen Tang with Non-Steroidal Anti-Inflammatory Drugs for Cervical Spondylosis," *Journal of Jiang Xi University of Traditional Chinese Medicine*, 2016, (6).
- ^v Zi KG, et al., "Exploration of the Mechanisms of Ge Gen Tang Against Influenza A Virus Infection," *Chinese Journal of Natural Medicines*, 2019(17):9.
- ^{vi} Luo K, et al., "Clinical Observation of Ge Gen Tang Plus Acupoint Application in the Treatment of Allergic Rhinitis," *Journal of Practical Traditional Chinese Medicine*, 2015(31):2.
- ^{vii} Ling E, "Clinical Observation on Acupuncture Combined with Ge Gen Tang," *Inner Mongolia Journal of Traditional Chinese Medicine*, 2019(38):10.
- ^{viii} Pan JF, et al., "Clinical Observation of Modified Ge Gen Tang in the Treatment of 43 Children with Acute Upper Respiratory Infection," *Journal of Pediatrics of Traditional Chinese Medicine*, 2019(3).
- ^{ix} Ling E, "Clinical Observation on Acupuncture Combined with Ge Gen Tang," *Inner Mongolia Journal of Traditional Chinese Medicine*, 2019(38):10.
- ^x Wang F, et al., "Clinical Study of Moxibustion Combined with Ge Gen Tang in Treating Dorsal Myofascitis," *Journal of Practical Chinese Medicine*, 2019(8).

USEFUL COMBINATIONS

To disperse cold more strongly from the exterior	Combine with Cinnamon Twig Formula
For stiff, painful neck from injury	Combine with Tieh Ta Formula
For sinus headache	Combine with Xanthium & Magnolia Formula
For cervical arthritis	Combine with Juan Bi Formula
For breast hyperplasia	Combine with Bupleurum & Tang Kuei Formula
For vertigo	Combine with Gastrodia & Uncaria Formula
For PCOS acne	Combine with Cinnamon & Poria Formula