



What is gagging?

Gagging and retching are terms used synonymously to describe similar occurrences despite having different meanings.

Retching is the initial process of expelling substances from the stomach, whereas gagging stops unwanted entry into the mouth or oropharynx.¹ Gagging is a normal reaction and protective reflex to stimulus such as dental instruments and clinician fingers within the oral cavity. Gagging can be absent, reduced or pronounced in the dental environment.¹ Patients presenting with a gag reflex may display the disruptive characteristics outlined in Table 1.

There are five regions within the oral cavity considered areas of maximum sensitivity which can trigger the gag reflex; these areas are the fauces, base of the tongue, palate, uvula and posterior pharyngeal wall.² Common iatrogenic causes of triggering these regions include over loaded impression trays, poor clinical technique and aspirator positioning.³ Additionally, gagging can be induced without physical contact and worsened by auditory, olfactory or psychic stimuli.⁴

Almost half of dental patients report gagging at least once during dental visits and 7.5% report always gagging.⁵ Whilst these numbers may not seem significant, there can be detrimental consequences for patients with a pronounced gag reflex as well as for the dental team. Patients who suffer with gagging

Exploring alternative methods of gag reflex control

Part 1: Acupressure

By L. Cox¹ and J. Brindley²

This article is the first of two covering the management of patients with a sensitive gag reflex. Part 1 will focus on the technique of acupressure which a less invasive variant of the traditional Chinese therapy of acupuncture.

Dental patients with a sensitive gag reflex can be difficult and problematic for registrants to manage as not only can a sensitive gag reflex cause complications in the delivery of dental care, it can also be a distressing event for the patient which can impact on their future care. This article aims to raise awareness of what a gag reflex is, how the severity can be assessed and ways in which to manage patients with a prominent gag reflex.

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are more likely to be anxious of dental visits, fear dental pain and have negative opinions of dental professionals.⁵ Patients may anticipate gagging or become distressed at the thought of dental care, thus resulting in dental avoidance, pain and neglected dentition.³

How can we assess gagging?

Several researchers have developed ways in which to classify and assess gagging severity; the most prominently used indices are the Gagging Severity Index (GSI) (Table 2)⁶ and the Gagging Prevention Index (Table 3), developed by Dickinson and Fiske.¹

Other systems and scales have been put into place, however the replicability of the GSI and GPI in particular reinforces their reliability.⁷

What is the role of the dental care professional (DCP)?

It is clear that anxiety can be a result of gagging, and the impacts of dental anxiety are well recognised within the profession.⁸ Managing dental anxiety and its contributing factors is therefore of key importance within the dental environment in order to ensure

Table 1 Signs and characteristics of gagging³

Oral signs	Other signs
Palatal or circumoral muscle spasm	Panic attack
Pharyngeal spasms	Lacrimation
Vomiting	Sweating
Excessive salivation	Fainting
	Uncoordinated and reversed peristalsis

effective delivery of care. The GDC's *Preparing for practice* document includes the learning outcome 'assess patients' levels of anxiety, experience and expectations in respect of dental care'⁹ which reinforces the role of DCPs in assessing and managing patients. Dental hygiene and therapy students are also expected to cover alternative therapies as part of their programmes as stated by learning outcome 1.1.8 which says 'describe the properties of relevant medicines and therapeutic agents and discuss their application to patient management' and learning outcome 1.5.2 which is 'describe

the range of orthodox complementary and alternative therapies that may impact on patient management'. Dental care and oral science has developed and evolved in a way that encourages a multi-disciplinary dental team approach to dentistry which is holistic, multifaceted, and patient-centred and complements general healthcare provision.¹⁰

It has been accepted that suitable treatments for the gagging patient include desensitisation, relaxation and distraction in addition to local anaesthesia, general anaesthesia and various sedation techniques.¹¹ These approaches may incur extra time

Table 2 Gag Severity Index (GSI)⁶

Severity Grading	Description
Grade I <i>Normal gagging reflex</i>	Very occasional gagging occurs during high-risk dental procedures such as maxillary impression taking or restoration to the distal, palatal or lingual surfaces of molar teeth. This is basically a 'normal' gag reflex under difficult treatment circumstances. Generally controlled by the patient.
Grade II <i>Mild gagging</i>	Gagging occurs occasionally during routine dental procedures such as fillings, scaling and impressions. Control can usually be regained by the patient, but may need assistance and reassurance from members of the dental team, and treatment can be continued. No special measures are generally needed to facilitate routine treatment but may be required for more difficult procedures.
Grade III <i>Moderate gagging</i>	Gagging occurs routinely during normal dental procedures. This may include simple physical examination of high-risk areas, such as the lingual aspect of lower molars. Once instigated, control is difficult to regain without cessation of the procedure. Re-commencement may be difficult. Gagging prevention measures are usually required. The gag may influence treatment planning and may limit treatment options.
Grade IV <i>Severe gagging</i>	Gagging occurs with all forms of dental treatment including simple visual examination. Routine treatment is impossible without some form of special measure to attempt to control the gag reflex. Treatment options may be limited and the gagging problem will be a major factor in treatment planning.
Grade V <i>Very severe gagging</i>	Gagging occurs easily and may not necessarily require physical intervention to trigger the reflex. The patient's behaviour and dental attendance may be governed by the gagging problem and it will be one of the prime factors when planning treatment. Treatment options may be severely limited. Dental treatment will be impossible to carry out without specific, special treatment for control of the gagging problem.

Table 3 Gag Prevention Index (GPI)⁶

Severity Grading	Description
Grade I <i>Gagging reflex obtunded</i>	Treatment and management methods employed totally obtund the gag reflex. Proposed treatment completely successful.
Grade II <i>Partial control</i>	Partial control of the gag reflex. Proposed treatment possible but occasional gagging occurs.
Grade III <i>Partial control</i>	Partial control of the gag reflex. Proposed treatment part completed or alternative treatment carried out. Involvement of simpler procedures at lower risk of producing gagging. Gagging occurs frequently.
Grade IV <i>Inadequate control</i>	Inadequate control of the gag reflex. Proposed treatment not possible. Some treatment can be carried out but only very simple procedures. Gagging occurs regularly
Grade V <i>No control</i>	Failure to control the gag reflex. Gag reflex so severe that even simple treatment not possible. No treatment provided or possible using gagging control methods.

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and inconvenience and can be met with varying degrees of success. Although Chinese medicine can seem an unlikely therapy in the dental environment, it does offer an additional method and can be considered a complementary therapy.¹²

What is acupressure?

It is believed that energy known as ch’i runs through 14 various pathways in the body and that 361 acupoints can rebalance Yin and Yang.^{12,13} Yin and Yang are a balance which define health and are complementary representations of dynamic equilibrium; Yin provides qualities such as tranquillity and rest whereas Yang is responsible for activation and transformation.¹⁴ If applying this theory to heightened gag reflex (GR) it is reasonable to presume that Yin is insufficient thus making the patient gag yet stimulation to acupoints will restore balance consequently relieving gagging. Acupressure involves applying constant pressure to acupoints;² this could be with thumb or finger pressure or devices such

as travel sickness bands. The acupoints that are associated with the relief of gagging are outlined in Table 4.

What is the evidence?

Point P-6 which is located on the wrist (Table 4) has been investigated by Lu *et al.*² who implemented test and control groups. Substantial differences in acupressure at P-6 compared to a dummy site were discovered. The operating team evaluated acupressure via a device and found a significant difference ($p = 0.002$); patient evaluation also showed differences between the sites ($p = 0.001$). Acupressure was also applied by thumb pressure and travel sickness bands in order to assess the differences in pressure variables. It was observed that conscious sedation achieved no notable differences in scores, demonstrating that sedation does not reduce gagging.² Limitations of this study were that a variety of dental treatments were performed and the participants were not reported to have previous gagging issues, therefore individual

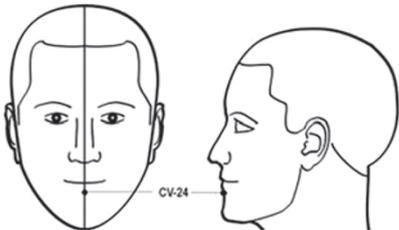
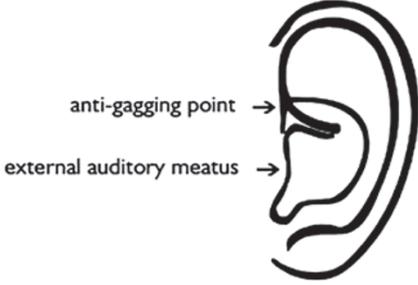
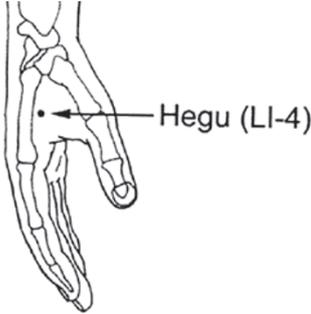
tolerance to particular treatments may skew results.

Point Hegu situated on the hand (Table 4) has been investigated by Scarborough *et al.*⁴ Clinical trials and a series of baseline, sham and treatment GR tests were used on 36 participants in either a hypersensitive or expected sensitivity group. Different areas of the mouth were stimulated in order to elicit a GR and acupressure was applied to either the left or right hand. Statistical analysis demonstrated that acupressure to P-8 moved the gag trigger point more posteriorly according to the GTPI in both groups ($p < 0.05$), thus increasing the participants’ tolerance to stimulation. Despite the robust methodology and promising results of this trial it is apparent that additional research and RCTs are required to further investigate this acupoint.

Studies investigating LI-4 could not be located; however, several reviews have discussed the success of acupressure to this acupoint and advocate it in relieving gagging.^{15,17,18} Xianyun¹⁹ states that Hegu can be pressed by the patient themselves, the dental nurse or the dentist – therefore offering flexibility. This acupoint offers a minimally invasive method of controlling the GR.¹⁵

There is also some evidence of synergy between the points, especially when a combination of acupressure and acupuncture is used. The success of CV-24 and P-6 used together has been documented in the relief of gagging.^{20,21} Sari and Sari²⁰ investigated

Table 4 Glossary of Acupoints

Name	Point	Location and Diagram	Source
Cheng jiang	CV-24	Labio-mental fold 	Rosted <i>et al.</i> ¹²
Er men	TB-21	Above tragus anti-gagging point → external auditory meatus → 	Fiske & Dickinson ⁶
Hegu	LI-4	Dorsum of hand, between first and second metacarpal bones 	Vachiramon & Wang ¹⁵
Lao gong	P-8 / PC-8	Centre of ventrum of hand, between second and third metacarpal bones 	Acupuncture, 2015 ¹⁶
Nei guan / Nei kuan	P-6 / PC-6	Ventral surface of wrist, 2 inches above crease of wrist 	Lu <i>et al.</i> ²

acupressure to P-6 alongside laser stimulation to CV-24. Together these points achieved a difference of 58.9% ($p = 0.001$) between GSI and GPI scores with 93.3% patients able to tolerate impressions. There was more success with CV-24 and P-6 combined compared to CV-24 alone evidencing a synergistic effect.

Acupressure offers a non-invasive, painless and cost free management technique when implemented by using finger pressure.^{4,20}

How can we develop and access these skills?

At present there are no known courses specifically for the use of acupressure. However, no additional training or qualifications are required to utilise this technique. It is therefore suggested that registrants practise identification of the

The use of alternative therapies within a healthcare setting is growing in popularity but is an area that should be further explored to promote its efficacy and use. Incorporating these techniques into personal daily practice has been an invaluable tool which has been easy to learn and implement. Some patients have adopted this technique themselves which has enabled them to control gagging at home, for example whilst brushing their teeth, which has had a positive impact on their oral health and well-being.

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acupoints on themselves or with colleagues which can help with quick location of points and experimenting with various pressures to ensure comfort. Once confidence has developed the technique can then be tried on patients who struggle with gagging.

By improving knowledge in this area you can support your patients to identify their own trigger points and improve the patient experience by consciously avoiding areas that elicit gagging. Gagging sometimes occurs in nervous patients who have a tendency to hold their breath during treatment which results in them panicking and losing the element of control. During treatment it is valuable to make nervous or gagging patients aware of the sensations they can expect to feel and encourage deep controlled breathing through their nose, taking regular breaks to allow time to relax and instructing them to raise their hand when they feel they need to stop. It is possible to achieve notable success by utilising these approaches coupled with firm, prolonged pressure to acupoint CV-24 on patients who experience exaggerated gag reflexes and nervousness.

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