



Pressure Points in Self Defence

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INTRODUCTION

Jujitsu, translated in the Oxford Japanese-English Dictionary as the 'Gentle Art', involves the efficient application of a practitioner's physical and cognitive resources to deter, immobilise, incapacitate or defeat an opponent. This objective is often achieved through two strategies: (a) utilising an opponent's strength and weight against them; or (b) targeting an opponent's physical or tactical weaknesses. This paper describes the use of physiological weaknesses of an opponent to optimise the efficacy of a strike or restraining technique.

DESCRIPTION OF PRESSURE POINTS

Pressure points, a subcategory of target areas, are areas of the body which elicit a physical response through the stimulation of one or more nerve cells. Nerve cells are distributed throughout vertebrate organisms through the central and peripheral nervous systems. There are three types of nerve cells: (a) *efferent* nerves, which transmit signals from the brain to the body; (b) *afferent* nerves, which transmit information from the body to the brain; and (c) *mixed* nerves, which perform both functions.

The stimulation of an afferent nerve cluster activates the autonomic nervous system of humans to transmit somatic information to the brain. This somatic information will cause the organism to manifest a subjective experience, including pleasure or pain, based on the nature of the nerve and the manner in which it was stimulated. Pain caused by the activation of afferent nerve fibres is described as 'nociceptive pain', and qualitatively varies based on the noxious stimuli, with the most common forms being 'thermal' (e.g., hot or cold), 'mechanical' (e.g., crushing, tearing or stabbing) or 'chemical' pain (e.g., acidic or alkali related injuries).

The stimulation of afferent nerve cells often activates the sympathetic nervous system of an organism to cause a sympatho-adrenal response. A sympatho-adrenal response, also known as a 'fight-or-flight' response, is a psychosomatic reaction occurring in response to a perceived harmful event which causes the adrenal medulla in the brain to secrete catecholamines. The function of catecholamines, including adrenaline and norepinephrine, is to liberate metabolic energy sources and accelerate heart and lung actions to prepare for the prosecution, or avoidance of, violent conflict. Related to the sympatho-adrenal response is the reflexive response, which causes the sympathetic nervous system to send impulses to efferent nerve centres to cause the extension or retraction of muscular fibres to remove the organism from the source of pain.

The locations of pressure points tend to be uniform across vertebrates of the same species. However, the nociceptive pain caused by the stimulation of specific pressure points may elicit varying subjective experiences among different members of the same species; although one organism might experience intense suffering, another might experience mild discomfort. The diversity of subjective experience requires Jujitsu practitioners to exercise caution when using pressure points to avoid the infliction of excessive harm or the performance of an ineffectual technique. Practitioners should also ensure that appropriate stimulation is applied to different pressure points; some pressure points respond better to subtle tactile pressure rather than strikes.

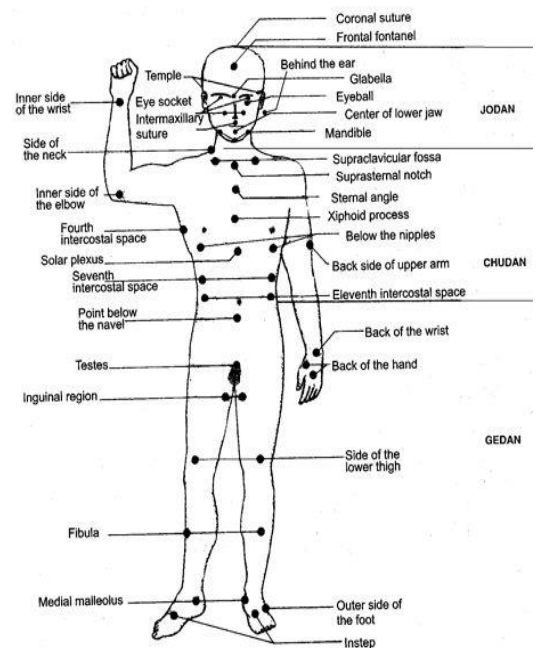


Figure 1: Depiction of selected target areas on the human body

USE OF PRESSURE POINTS

Pressure points are used for two main purposes in martial arts: (a) causing pain to harm or injure the opponent; or (b) activating a reflexive response to compel an opponent to cede a position of advantage, or assume a position of disadvantage. Practitioners select appropriate pressure points to target based on their accessibility, the manner in which they are stimulated, the circumstances of the attack and their somatic effect. Although a comprehensive description of the uses of pressure points is beyond the scope of this paper, it shall describe several methods for activating identified pressure points to defend against an opponent.

Base of the Nose

The base of the nose, located between the nasal septum and the upper lip, is a common pressure point used in Jujitsu. It possesses a large number of sensitive afferent nerves which are protected by comparatively thin layers of skin. Through applying unexpected pressure to the base of the nose, the opponent will reflexively respond through leaning backwards to avoid the perceived cause of the pain. Escalating the force applied to the base of the nose, through a strike, will cause a commensurate increase in the intensity of pain, although it may fracture the opponent's nose.

As illustrated by Figure 2, applying pressure to the base of the nose may be used to defend against a downward strike with the base of the fist (Level One Defence). Other appropriate applications of this technique include defending against strangles, chokes or front 'bear hugs'. If the apparent intention, physical attributes and capabilities of the opponent require a more severe response, a strike may be applied to the base of the nose to cause acute harm or injury to the opponent (Level Two Defence). Consistent with the Kyushin Ryu Jujitsu curriculum, the severity of the response should be proportionate to the circumstances of the attack.



Figure 2: Illustration of the application of pressure to the base of the nose of an opponent (Level One Defence) to defend against a downward strike.

Jaw

The mandible (jaw bone) is a common and convenient target in defending against an opponent. The nerves along the jaw are sensitive, highly exposed and close to the surface. A roundhouse punch to the jaw inflicts acute pain which disorients the opponent, and may cause sufficient cranial trauma or suffering to render the opponent unconscious. As demonstrated by Figure 3, this technique may be used to defend against a right-side punch. The Jujitsu practitioner must remove him or herself from the line of attack through stepping with the right foot to the opponent's left side, which exposes the jaw for a counter-strike with the right fist.



Figure 3: Illustration of a strike to the jaw (Level Two Defence) to defend against a right-side punch.

Inside of the Biceps

The *biceps brachii* (biceps) is a two-headed muscle located on the upper arm between the shoulder and elbow. Although there are less exposed nerves in the biceps, an effective strike to an afferent cluster will cause temporary disablement or weakening of the affected arm. On the interior of the biceps, between the short and long heads (as demonstrated by Figure 4, approximately 10 centimetres up from the elbow), there is a collection of exposed nerve cells which can cause substantial pain and debilitation when subjected to intense and targeted pressure or an effective strike.



Figure 4: Location of pressure point on the biceps brachii

The *biceps brachii* pressure point may be used when an opponent is grasping, or attempting to strike, the practitioner. As demonstrated by Figure 5, if the arm of the practitioner has been grasped, the pressure point may be used by placing the thumb of the practitioner's opposite hand on the target area and applying pressure. Intense pressure may stimulate a reflexive response causing the opponent to release their grip on the practitioner's arm and withdraw from the source of discomfort.



Figure 5: Illustration of applying force to the biceps brachii interior pressure point

Inside of the Thigh

The 'quadriceps' comprise of four muscles around the femur: the *vastus lateralis* (exterior lateral thigh); *vastus medialis* (interior lateral thigh); *rectus femoris* (upper right thigh); and *vastus intermedius* (located under the *rectus femoris*). A collection of sensory nerves exists near the interior lateral edge of the *vastus medialis*, around 10 centimetres up from the medial knee.

As illustrated in Figure 6, the *vastus medialis* pressure point may be activated by applying pressure using the index and middle fingers to defend against a headlock. Using the hand furthest from the opponent, the Jujitsu practitioner should place their fingers around 10 centimetres up from the medial knee and apply substantial pressure to the sensory nerve cluster. This will cause pain to the opponent, and may result in their reflexively withdrawing from the headlock.

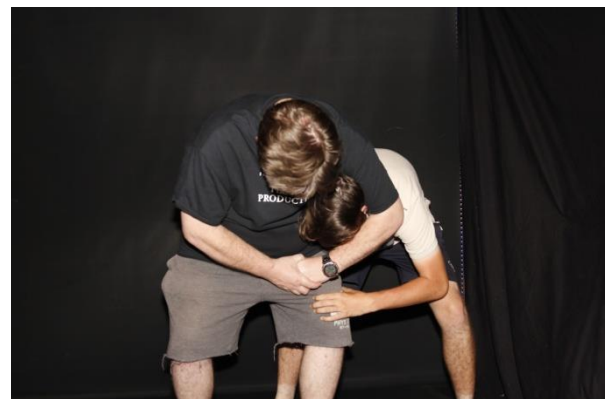


Figure 6: Illustration of applying force to the vastus medialis pressure point

Outside of the Thigh

The *vastus lateralis* (exterior lateral thigh) is the largest and strongest muscle in the quadriceps, which tends to be more resistant to mechanical pressure. However, around 20 centimetres (one handspan) from the knee, approximately midpoint between the lateral and front of the thigh, is a section of muscle which is contiguous with the femur. Application of force to this pressure point will cause the *vastus lateralis* to be pressed against the femur, causing pain through the associated nerve cells. Substantial force is required to stimulate this pressure point, which may be achieved through strong tactile pressure using the thumb, or through striking the target area with a closed fist or knee. With sufficient force, a strike is likely to cause a quadriceps contusion (often known as a 'deadleg' or 'corked thigh') which may immobilise or debilitate the affected leg.

Figure 7 illustrates the use of the *vastus lateralis* pressure point to defend against a side headlock. The Jujitsu practitioner should apply a quick and forceful strike to the identified pressure point. This will cause immediate intense pain, and may limit the use of the affected leg.



Figure 7: Illustration of applying force to vastus lateralis pressure point

CONCLUSION

Pressure points are an efficient means of optimising a practitioner's capacity to project force against an opponent. This paper has demonstrated effective self-defense techniques for targeting four pressure points: the base of the nose, *biceps brachii*, *vastus medialis* and *vastus lateralis*. Although pressure points may be difficult to stimulate, extensive training and practice may assist a practitioner to defeat a physically larger and stronger opponent. Variance in the human condition means that not all pressure points will be equally effective against all opponents; therefore, practitioners must learn different techniques to target different pressure points. Practitioners must exercise caution in targeting pressure points; an excessive application of force may result in permanent injury or disability to the opponent, which may not be proportionate to the threat confronted. Accordingly, proper judgement and skill are essential to the efficacious use of pressure points.

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