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# 목뼈의 굽힘과 폼

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## Flexion and Extension of Cervical Spine

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### 요 약

본 논문에서는 목을 구부려 턱이 가슴에 닿도록 하는 굽힘과, 목을 들어 천장을 보는 것처럼 자세를 취하는 폼에 대하여 각을 측정한다. 굽힘의 각도는 45~50°가 기본이며 최대의 가동 범위는 80~90°이다. 폼의 각도 또한 40~50°가 기본이며 정상은 70°로 제한된다.

### ABSTRACT

In this paper, the angles of flexion of bending the neck to touch the chest and extension of lifting the neck backwards to take the posture of looking up at the ceiling are measured. The basic angle of flexion is in the range of 45~50° while the maximum range of angle of movement of flexion is 80~90°. Similarly, the basic angle of extension is in the range of 40~50° and the limit of the normal angle of extension is 70°.

### 키워드

목뼈(Cervical Spine), 굽힘(Flexion), 폼(Extension) 각(Angle)

### I. 서 론

The neck is defined as the neck bone and the muscles involved in osteokinematic movements. The movement of the neck is expressed by the relative position of the head relative to the torso. Gross movement is possible by bone kinematic movements in the neck joints. The neck bone is called a cervical spine or cervical vertebrae.

This paper describes a more detailed study of [1]. Although there are a lot of related researches, the study of smartphone usage is similar to [2]. The purpose of [2] was to assess the influence of the duration of smartphone usage on cervical and lumbar spine flexion angles and reposition error in the cervical

spine.

### II. 목의 굽힘과 폼 및 치료

The structures of the posterior arch of the annulus is responsible for much of the Flexion and Extension of the neck that can be seen when nodding the head. The flexion of the neck bone causes the neck to bend so that the chin touches the chest. The flexion angle of the neck bone is 45° to 50°. If the angle is much less or causes pain, treatment is needed. The maximum angle of flexion is 80° to 90°.

For majority of people, the range of the angle of flexion of cervical spine is 45°~50°. There are those with the maximum angle of

90°. However, patients with abnormality in flexion of cervical spine experience pain if it is bent only by 1°. In most cases, this pain leads to headache, thereby needing therapy urgently. The angle of flexion of the cervical spine can be measured as illustrated in the Fig. 1 below.

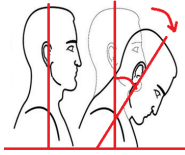


Fig. 1 Flexion of Cervical Spine

Extension of the neck bone takes the position as if looking at the ceiling. The extension angle of the neck bone is 40 ~ 50°. If the angle is much less or causes pain, treatment is needed. For majority of people, the range of the angle of extension of cervical spine is 40°~50°. There are those with the maximum angle of the movement of the joint of 70°. However, patients with abnormality in extension of cervical spine experience pain if it is bent only by 1°. Similar to flexion, this pain leads to headache in most cases, thereby needing therapy urgently. The angle of extension of the cervical spine can be measured as illustrated in Fig. 2.

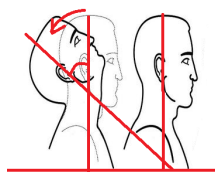


Fig. 2 Extension of Cervical Spine

There are many other therapeutic methods for the alleviation of pain and therapeutic massage methods for each of the symptoms the patient experiences. However, these will be examined when we get into more detail and only the aforementioned therapeutic methods are introduced in this thesis.

### III. 실험

For the experiment in this thesis, manual measurements of the flexion and extension of the cervical spines of 50 subjects composed of general public in their 50's were taken. Then, manual therapy appropriate for the results of

the manual measurement taken was executed once a week over a period of a month. Table 1 below illustrates the results of the experiment.

Table 1. Results of the experiment (Unit: persons)

Categories	After manual measurement	After manual therapy
Abnormal flexion	7	3
Abnormal extension	6	2
Abnormality in both	5	1

### IV. 결 론

The basic angle of flexion is in the range of 45~50° while the maximum range of angle of joint movement is 80~90°. Similarly, the basic angle of extension is in the range of 40°~50° and the maximum range of angle of joint movement was limited to 70°. If the angle of flexion and extension fails to reach this range of basic angle or induces pain, appropriate therapeutic method was presented. Therapies can be categorized into active/passive rotation.

### Acknowledgement

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