

Key Points

1. Neck and arm pain are common among Chiari/SM patients
2. Study assessed the impact of neck/arm pain on overall health
3. 1,809 people with cervical spine disease were surveyed using the SF-36 Health Survey
4. People with both neck and arm pain had a lower overall health score than people with just neck pain or just arm pain
5. Neck and arm pain affected younger patients more than older patients
6. Duration of symptoms affected mental health status, but not physical health status; as the pain lasted longer, mental health was affected

Definitions

acute - of short duration

axial - along the centerline, in the case of the human body, along the neck or spine

cervical - relating to the upper portion of the spinal cord, the neck area

chronic - of long duration, long lasting

lumbar - relating to the lower part of the spinal cord, or the lower back

normative - normal; statistically, the results of testing a large body of people

prospective - type of study which looks forward in time; the study is designed before patients are evaluated/treated

radicular - relating to the roots; in the case of radicular pain, damage to a nerve root can actually cause pain at the end of the nerve

thoracic - relating to the middle part of the spinal cord, the chest area

How Neck & Arm Pain Affect Overall Health

Anyone who suffers from chronic pain knows first-hand that the pain can wear down a person over time and have a profound impact on their quality of life. Pain that limits functionality - like neck and arm pain, common among Chiari and syringomyelia patients - can be especially troubling. Now a group of researchers has shown, and quantified, the impact that these types of pain can have on a person's overall health.

In a study published in the September 1, 2003 issue of the journal *Spine*, Dr. Scott Daffner, with the orthopedic surgery department at Thomas Jefferson University, and his colleagues showed that people with both neck and arm pain are impacted significantly more than people with either neck or arm pain alone. In addition, they found that younger people are impacted by neck and arm pain more than older people and that as the pain lasts longer, overall mental health is negatively affected, but not physical health (versus short-term pain).

In order to arrive at these results, the researchers prospectively studied more than 1,800 patients with medically referred cervical spine disease that were seen at one of the centers of the National Spine Network (see Left Side Bar). The impact of the subject's pain on their overall health was evaluated using the SF-36 Health Survey.

The SF-36 is a 36 question, multi-purpose health survey which has been used to assess the impact of more than 200 diseases and in more than 50 countries. The answers to the 36 questions are used to create scores from 0-100 along 8 sub-scales: bodily pain, vitality, general health, mental health, physical function, role physical, role emotional, and social function; with 100 representing perfect function. In addition, the sub-scales can be grouped into two high-level measures, physical health and mental health. In order to assess a disease's impact on health, normal scores for age-gender groups (which have been developed using thousands of subjects) are subtracted from a subject's actual score. So if a "normal", or average, 30 year-old man scores 80 on vitality, and a subject scores 50 on vitality, the "impact" score is -30. This impact score shows how far below normal health a person is or how much a disease has affected their health.

The team analyzed the data by grouping the subjects in three ways: pain location (axial/neck only, radicular/arm only, both), age (younger than 40, 40-60, older than 60), and duration of symptoms (less than 6 weeks, between 6 weeks and 6 months, and longer than 6 months).

They found that for pain location, people with both neck and arm pain were significantly more impacted than people with just one type of pain (See Table 1) in almost every sub-scale. The researchers speculate that the combined pain usually represents neck pain with motion and neurological type symptoms in the arms, such as shooting pain or numbness, and is a more intense pain than usually occurs with neck pain alone. It is interesting to note that of the three groups, people with arm pain alone were impacted the least.

In terms of age, the younger two groups were significantly more impacted - across all eight sub-scales - by their pain than the over 60 group. The researchers believe this is true because of the lifestyle that younger people live versus older people. In general, younger people are healthier, more active, often have demanding careers, young children, and in general higher expectations of their health. The authors also point out that the normal values for people over 60 are much lower as many types of health issues start to take their toll on overall well-being.

Looking at the duration of symptoms yielded a somewhat surprising result. While there was little change in the high-level physical scale, there was a significant decrease in the high-level mental health scale for the chronic (longer than 6 months) group versus the acute (shorter than 6 weeks) group. This result may reflect the association between chronic pain and depression and highlights the critical need to adequately treat pain before it reaches the chronic stage.

So what does this mean for Chiari and syringomyelia patients? While none of the subjects in the study had CM/SM, it is reasonable to assume that in general the results are applicable to Chiari and SM as well. The results were perhaps nothing we didn't already know, that neck and arm pain can impact daily activities and overall physical and mental health, however, documenting and scientifically quantifying this issue may lead to more awareness of, and focus on, this problem.

Table 1
SF-36 Impact Scores By Type Of Pain

Subscale	Axial Neck	Radial Arm	Both
<i>Bodily Pain</i>	-40.2	-38.0	-47.9
<i>Vitality</i>	-19.0	-14.7	-23.0
<i>General Health</i>	-11.7	-4.2	-13.6

National Spine Network

- Non-profit organization made up of 28 independent Centers of Excellence in spinal care
- Mission is to improve the cost-effectiveness, consistency, and quality of spine care
- NSN Centers are committed to appropriate, conservative treatment, patient education, outcomes data collection and research
- Founding premise is that spine surgery and expensive diagnostic tests, such as MRIs, are often over-utilized and that more conservative modalities are frequently dismissed prematurely.

<i>Mental Health</i>	-9.7	-8.0	-13.6
<i>Physical Function</i>	-22.8	-21.3	-30.1
<i>Role Physical</i>	-50.4	-52.2	-64.0
<i>Role Emotional</i>	-22.0	-16.7	-29.0
<i>Social Function</i>	-28.8	-23.6	-36.0

Notes:

- Impact score equals actual score minus the age/gender matched normal value; thus this score represents the 'impact' the pain has had on a person
- Scores have been rounded to the nearest tenth
- For more information on the SF-36 Health Scale, see this month's [Special Report](#)

Source: Daffner SD et al.; Impact of Neck and Arm Pain on Overall Health Status. Spine, Sep 1; 28(17):2030-5.

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