Reduced Pain Responses in Individuals with Down Syndrome
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Individuals with Down syndrome have reduced and delayed pain responses. They are not insensitive to pain, but their expression is delayed and less precise. It is hard to tell if there is a decreased ability to sense the pain, localize the pain, or if the reaction to the pain is delayed. There are also factors of impaired communication that make it difficult to assess. It is important to understand differences in pain responses as a healthcare provider and family members caring for an individual with Down syndrome.

Studies of mice with genetic Down syndrome have shown they have less response to pain and decreased behaviors to soothe the pain. It has been proposed by this study and other studies that a receptor in the nerves that transfer pain signals to the brain is mutated in and may possibly play a role in decreased responses to pain (1).

Another study compared the ability to recognize and localize freezing cold stimuli. The patients with Down syndrome showed delayed responses to the cold and were less able to localize the stimuli within 2 cm (2). When we ask patients where it hurts, we must consider that patients with Down syndrome may not be able to pinpoint and say exactly where the pain is coming from.

While there may be hindrances in perception of pain, there is also difficulty communicating. In many studies it was noted that a weakness of the study is that they relied on the patient to verbally express the pain. One study was done to make a pain score from nonverbal cues. The Non-Communicating Adults Pain Checklist was developed in 2009 to help health care providers to assess for nonverbal communication of pain. The scale uses vocal expression, emotional reaction, facial expression, body language, protective reactions, and physiological signs (3). This scale can be used in ongoing pain research and in the healthcare setting to help more appropriately assess pain.

When caring for individuals with Down syndrome, we need to pay attention to nonverbal cues as expression of pain. We need to be aware that they may not be able to localize or describe the pain and the evaluator must have a low threshold to investigate possible sources of pain. Many chronic pain diseases like arthritis are
diagnosed very late in patients with Down syndrome because they do not verbally complain of pain. Additionally, after painful procedures it may be appropriate to give pain medications on a scheduled basis to help control pain even if pain is not verbally expressed. People with Down syndrome still have pain, it is just the responses to pain that are reduced and delayed. There are likely multiple factors contributing and we need to be aware and understand the differences in pain responses.

References