WHAT IS CHRONIC PAIN?

Defining Chronic Pain

In humans, chronic pain has been defined as pain that persists beyond the expected course of healing/acute disease, often described as lasting longer than 3–6 months. However, this timeline may not apply to cats since their lifespan is shorter than that of humans. Rather than being defined by time, chronic pain is better defined by where it originates, if it is localized or widespread, and whether or not it serves a purpose.

The term 'maladaptive pain' is often used when referring to chronic pain to emphasize the fact that in chronic pain conditions, there is no obvious purpose to the pain, and that pain is being driven by dysfunction of the peripheral and/or central somatosensory system. See the Glossary for further definitions and terminologies.

There are some unique features that differentiate chronic from acute pain:

- Acute pain is 'adaptive' or 'physiologic' because it serves an important (adaptive) physiologic function, which is to prevent or limit damage from tissue injury such as surgery or trauma. From an evolutionary perspective, such pain would prevent the cat from overusing the injured tissue while healing is occurring. However, without pain control, especially if the pain is moderate to severe, the protective benefit is overshadowed by the negative effects of pain on health, behavior, and welfare. In addition, untreated pain can lead to chronic pain. Thus, effective analgesia is imperative for acute pain.

- There are two types of adaptive pain:
  - Nociceptive—pain that is only activated by high-threshold noxious stimuli, including stimuli that cause tissue injury, this serves as a warning system to harmful stimuli
  - Inflammatory—pain that occurs after tissue damage and produces heightened sensitivity (peripheral sensitization) of the tissue associated with a classical inflammatory response
    - In this case, pain generally resolves as inflammation resolves

- Chronic pain is often called 'maladaptive' or 'pathologic' because in large part it is driven by sources other than the original lesion (e.g., pain from nerve damage that persists after surgery or trauma tissue damage has resolved) or persists from incurable conditions (e.g., osteoarthritis), and thus is not protecting the tissue because no healing is occurring.
- Chronic pain is a complex mix of different, often overlapping, types of pain, including chronic inflammatory pain along with neuropathic pain and/or functional pain. These different types of pain are described to enhance understanding of the processes that are driving pain, but an important concept is that no clinical chronic pain condition is driven by only one 'type' of pain.
    - Neuropathic pain arises from gross, obvious damage to the spinal cord or peripheral nerves, or from peripheral neuropathy (e.g., diabetic neuropathy) via either direct damage to nerve endings present in the tissues, or via increased innervation that accompanies joint remodeling and angiogenesis.
    - Functional pain has no evidence of a peripheral lesion or inflammation but there is increased sensitivity to stimuli, spontaneous pain, and abnormal somatosensory processing
- Chronic pain is usually caused by long-term disease or injury but can also be caused by untreated or undertreated acute pain. In most cases, there is no clear end-point as chronic pain can exist without a specific or identifiable source and may not be tied to inflammation
    - Chronic pain is often driven by sustained noxious stimuli with pathological changes and neuroplasticity leading to what has been termed 'central sensitization.' The latter is commonly manifested clinically with hyperalgesia (exaggerated pain response to a mildly painful stimulus) and allodynia (pain response to non-painful stimulus)
- An important concept is that chronic pain in many instances arises from an incurable source or from non-healing tissue and serves no beneficial purpose. **Thus, chronic pain itself is the disease that is being treated.**