Optimizing Physical Therapy Modalities in Pain Rehabilitation

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BACKGROUND INFORMATION

Physical therapy is very important for patient rehabilitation. Physical therapy not only includes exercises and manual work, but it is also successful because of modalities. Modalities such as ice packs, e-stim, and hot packs can be used before, during, and/or after a patient's session in order to create overall pain relief and comfortability. My time at the clinic consisted multiple things, but one of the most important tasks was setting patients up on modalities

GENERAL MODALITY BENEFITS

- modulating inflammation
- nerve conduction for pain relief
- pain signal blockage

CONCLUSION

After working at Highline Physical Therapy in Burien Washington I have been able to use these modalities on myself and on patients, and I've also been able to observe the positive effect it has towards analgesia. The biggest issue that I've encountered while working at the clinic is the lack of knowledge that patients have on modalities, which could easily be fixed by either the aides or physical therapists by telling them the basics of each modality and why/how they should be using it. When patients truly understand what they're doing to their body, they are more inclined to do what they need to do in order to get better. Mental attitude has always taken a big role in patient care, and when the patient has any sort of negative feeling towards what they're doing, their treatment could go a lot slower or in some cases won't give them the results that they desire. As I pursue a career in physical therapy, this internship and job will always be considered a baseline for me, and I will forever appreciate all that I have learned from my peers and patients.

COLD THERAPY (ICE PACKS/GAME READY SYSTEM)

- Aids with inflammation, which typically results in pain for that inflamed area.
- Ice is used to reduce nerve activity and lower the patient skin temperature, resulting in pain relief (Moe 2023). When the skin temperature is lowered, it also lowers the activity of our nerves, preventing the pain to be fully felt by the patient. .

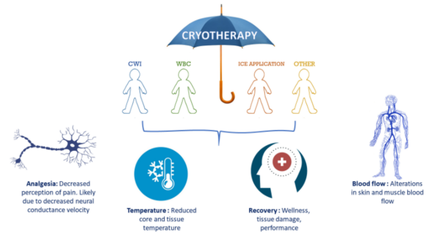
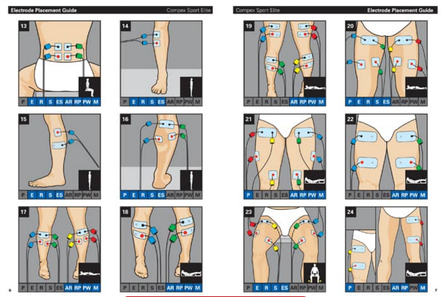


figure 1: diagram explaining cryotherapy (Allan et al. 2022)

figure 2: game ready sleeve for shoulder (GameReady, 2023)

figure 3: possible placements for e-stim pads (Compex, 2023)



ELECTRICAL STIMULATION

INTERFERENTIAL CURRENT THERAPY

- Uses alternating currents in order to reach deeper tissues, by maximizing the current to permeate the target tissues along with reducing nerve stimulation (Rampazo and Liebano 2022).
- When this current is applied to direct skin it results in less skin resistance, which then allows the current to easily go through (VSI 2023).
- IFC has a frequency of 4000 hz and is composed of two circuits that cycle per second as they are being superimposed, and these frequencies are able to block pain transmissions that are sent to the targeted area from the spinal cord (VSI 2023).

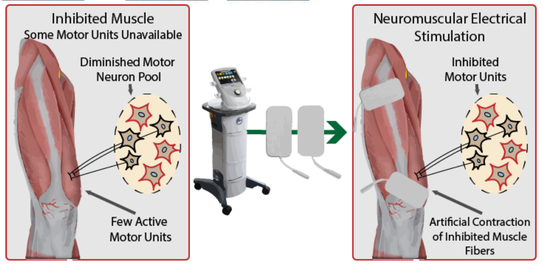


figure 4: affects of eletrical stimulation (Sherman, 2023)

HEAT THERAPY

- Heat is applied after the patients session is to provide more blood flow as after the individual goes through their exercises, their muscles are burning chemical byproducts that need to be eliminated during the active muscle movement.
- When the exercises are too intense or strenuous to the individuals body, the amount of blood needed to get rid of those chemicals becomes sparse (John Hopkins Medicine 2022).
- The sensory nerves in our body are able to react to the heat applied to the skin by releasing signals that result in blood vessel dilation furthermore enhancing the speed at which blood is being circulated in that area (Curtis 2021).

figure 5: how heat penetrates the skin (ShieldLife, 2023)

SOURCES CITED ->