How Do I Love Thee: Patterning

Identifying a Pattern

There are several patterns within rehabilitation. To name a few, there is a pattern to the way an injury evaluation is performed, the order certain exercises are performed in and even patterns within how the exercises themselves are performed. Rehabilitation protocols also follow basic patterns. For this assignment, I'll evaluate the post-surgical and post-injury rehabilitative protocols.

Below, I have selected one non-surgical knee injury and one surgical knee injury. I did so to point out that the rehabilitative process is essentially the same despite the injuries being completely different. The same would hold true for a shoulder surgery compared to an ankle sprain.

Non-Surgical Medial Collateral Ligament Sprain (complete rupture) Rehab Protocol:
http://www.gundersenhealth.org/upload/docs/Services/SportsMedicine/MCL-Grade-III.pdf

Post-Surgical Anterior Cruciate Ligament Repair Protocol:
http://www.gundersenhealth.org/upload/docs/Services/SportsMedicine/ACL-Reconstruction.pdf

Both these protocols are broken down into phases (weeks) and begin with pain control with gentle range of motion exercises. They then progress light strengthening exercises and proprioceptive activities. Strength and endurance are then improved upon until the patient is considered "functional". Once functional, the patient may begin more aggressive sport or work-related activities such as running and agility drills.

This particular pattern is the essence of musculoskeletal rehabilitation. This pattern is largely based on scientific data collected through numerous studies to determine healing rates, tissue composition and appropriate exercise selection (just look at the reference pages!). Without this pattern patients may not have favorable outcomes post-injury.

Re-Patterning

Because this pattern of rehabilitation is scientifically sound, there is not an applicable way to "re-pattern" it. Though, there is a way to teach this pattern in a different way: backwards. Thinking about the ultimate goal of functionality, whether it is work or sports related, requires reaching smaller goals first. Functionality requires basic strength, basic strength requires a certain range of motion to achieve full strength. This range of motion cannot be reached until pain and swelling are controlled. If the student can re-think the rehab process from the end stage back to the beginning, they will have a better understanding why the overlaying pattern is the same for almost any injury. If they happen to be working with a patient or athlete who is "stuck" from reaching a particular goal they will be able to look at the rehab and see if there were any gaps in therapy. Was balance/proprioception not addressed? Was range of motion not restored? In addition, they will be able to come up with better rehabilitation plans themselves (where there is no documented protocol) when dealing with injuries because they will have a better understanding of the importance of each goal.

Discussion

Patterning is a cognitive tool used to identify a repetition and be able to predict the next "move" or an outcome. My original pattern is the overlaying pattern of the rehabilitative process for a musculoskeletal injury. This pattern is typically broken down into smaller phases or stages in which certain goals are to be achieved i.e. controlled/decreased pain and swelling, weight bearing vs. non-weight bearing, range of motion at a certain degree, strength at a certain percentage of the unaffected limb, improved proprioception and muscular endurance, etc. before moving on to the next

phase. These goals are largely based on scientific data collected concerning healing rates, tissue type, tissue remodeling (healing), appropriate and effective exercises and preventative measures.

Because rehabilitation is based on science, it is difficult to re-pattern the process and have it still be sound and applicable. Though, teaching the pattern does not necessarily have to follow the “from beginning to end” principle. Instead, why not identify the desired outcomes and describe, starting from the point of the final outcome, each goal that must be achieved prior to?

It makes sense that you cannot achieve one larger goal (full function) without achieving smaller goals prior to it (full range of motion) and there is nothing wrong with teaching from “start to finish”. Though, I feel if the student has to “discover” each goal by working backwards, their grasp will be more firm than it may have been otherwise. This will especially help them when they have to develop their own rehabilitation plans for patients. Not every injury comes with a documented protocol to follow! Understanding what it takes to reach the final outcome will undoubtedly help them plan a solid rehabilitation program for their patient or athlete.