SAFETY AND FIRST AID
IDENTIFIES ACTIVITIES FOR RESTORING STRENGTH AND CONDITION OF PARTICIPANTS AFTER REHABILITATION

Quarter 1 – MODULE 4
Session: WEEK 4-5

What I Need to Know?

This module was developed to help the learners demonstrate understanding of safety, injury prevention and management in sports, exercise and recreational settings for prompt and proper response during emergencies. The learners demonstrate safety practices consistently in sports, exercise and recreational activities.

This lesson will guide the learners to identify activities for restoring strength and condition of participants after rehabilitation; SP_SFA11-Ic-4.

At the end of the module, you should be able to:

1. Identify the benefits of water training, cycling, recreational walking, weight training, stretching and relaxation.
2. Practice activities related to water training, cycling, recreational walking, weight training, stretching and relaxation.
3. Apply knowledge and skills in real life situation.

What I Know?

Task 1: PRE-TEST

*Direction: MATCHING TYPE. Choose the letter of the correct answer from column B. Write your answer on your Study Sheet.*

1. Is the restoration of optimal form (anatomy) and function (physiology). A. Cycling
2. Are injuries and disorders that affect the human body’s movement (i.e. muscles, tendons, ligaments, nerves, discs, blood vessels, etc.) B. Weight training
3. This injury are usually due to a strong force – such as a fall, accident, collision or laceration – and are more common in contact sports C. Rehabilitation
4. This injury are chronic injuries that result from overuse of a structure such as a muscle, joint, ligament, or tendon D. Recreation walking
5. This training helps strengthen muscles and ligaments, improves your cardiovascular fitness, and serves as a safe and effective workout, all while gently supporting your body, particularly injured areas. E. Musculoskeletal injuries
6. It is a healthy, low-impact exercise that can be enjoyed by people of all ages, from young children to older adults. It is also fun, cheap and good for the environment. F. Recovery
7. This exercise is a simple way to improve overall well-being and reduce the chances of developing the health concerns associated with inactivity. G. Stretching
8. This training is important in building lean muscle to help your body perform and look better. H. Water training
9. It is a form of physical exercise in which a specific muscle or tendon (or muscle group) is deliberately flexed or stretched in order to improve the muscle's felt elasticity and achieve comfortable muscle tone.

10. This principle dictates that athletes need adequate time to recuperate from training and competition.

What’s New?

Task 3: Copy and answer the following scrambled words on your Study Sheet. These words are related to the activities for restoring strength and condition of participants after rehabilitation.

1. TNEORIBAAILHIT
2. EMUOTSUALLSCKLE JNIIERUS
3. CIORM-CTRTMAAUU UIJIRNSE
4. REAWT GTRNAIIN
5. LWO CPITAM ECEESRIX
6. UVCACROSRLADAI FIETSNS
7. NYCLIG
8. AILERRTACOEN ALGKNWI
9. GHEWTI INAIGRNT
10. ITSGNEHRCT
Rehabilitation is the restoration of optimal form (anatomy) and function (physiology). The noun rehabilitation comes from the Latin prefix re-, meaning “again” and habitare, meaning “make fit”. It is a process designed to minimize the loss associated with acute injury or chronic disease, to promote recovery, and to maximize functional capacity, fitness and performance.

Musculoskeletal injuries are an inevitable result of sport participation. Football has the highest incidence of catastrophic injuries, with gymnastics and ice hockey close behind. Tissue injury from sports can be classified as macro-traumatic and micro-traumatic.

- **Macro-traumatic injuries** are usually due to a strong force – such as a fall, accident, collision or laceration – and are more common in contact sports such as football and rugby. These injuries can be primary (due to direct tissue damage) or secondary (due to transmission of forces or release of inflammatory mediators and other cytokines).

- **Micro-traumatic injuries** are chronic injuries that result from overuse of a structure such as a muscle, joint, ligament, or tendon. This type of injury is more common in sports such as swimming, cycling and rowing.

The process of rehabilitation should start as early as possible after an injury and form a continuum with other therapeutic interventions. It can also start before or immediately after surgery when an injury requires a surgical intervention.

**RECOMMENDED ACTIVITIES FOR RESTORING STRENGTH AND CONDITION (AFTER REHABILITATION)**

**A. WATER TRAINING**

*The connection between swimming and rehab*

There’s no doubt that pool-based rehab can be good for the body. It helps strengthen muscles and ligaments, improves your cardiovascular fitness, and serves as a safe and effective workout, all while gently supporting your body, particularly injured areas.

What makes water such a wonderful medium for rehabilitation? The key is buoyancy. Water helps keep your body afloat, but also provides resistance that will make certain movements more challenging.

Here are just a few of the benefits of swimming or other water-based rehab:

- **Less pressure on the body**
  The buoyancy of water helps support your body weight, taking the pressure off joints. This makes swimming and other water-based activities good choices for people who have suffered knee injuries, for example.

- **A no-weight workout**
  Swimming is a non-weight-bearing activity, which means that it can be a safe and comfortable exercise for people with back pain and similar issues.

- **Low impact exercise**
  Exercising in water is easier on your body than exercising on land because you have a lesser chance of falling, stumbling, or otherwise putting yourself at risk of injury. For that reason, swimming and other water activities tend to be safe options for most people.
Can work various parts of the body
Different swim strokes can work various parts of your body. The backstroke can be more comfortable for those who have a back injury because it allows you to float on your back without stressing it.

Heart-healthy training
Working out in water provides you with good exercise and helps maintain cardiovascular fitness at a time when injuries might otherwise keep you on the sidelines.

B. CYCLING
Cycling is a healthy, low-impact exercise that can be enjoyed by people of all ages, from young children to older adults. It is also fun, cheap and good for the environment. It became a great source of exercise during the COVID-19 era.
Riding to work or the shops is one of the most time-efficient ways to combine regular exercise with your everyday routine. An estimated one billion people ride bicycles every day – for transport, recreation and sport.

Cycling for health and fitness
It only takes two to four hours a week to achieve a general improvement to your health. Cycling is:

- Low impact – it causes less strain and injuries than most other forms of exercise.
- A good muscle workout – cycling uses all of the major muscle groups as you pedal.
- Easy – unlike some other sports, cycling does not require high levels of physical skill. Most people know how to ride a bike and, once you learn, you don’t forget.
- Good for strength and stamina – cycling increases stamina, strength and aerobic fitness.
- As intense as you want – cycling can be done at very low intensity to begin with, if recovering from injury or illness, but can be built up to a demanding physical workout.
- A fun way to get fit – the adventure and buzz you get from coasting down hills and being outdoors means you are more likely to continue to cycle regularly, compared to other physical activities that keep you indoors or require special times or places.
- Time-efficient – as a mode of transport, cycling replaces sedentary (sitting) time spent driving motor vehicles or using trams, trains or buses with healthy exercise.

Health benefits of regular cycling
Cycling is mainly an aerobic activity, which means that your heart, blood vessels and lungs all get a workout. You will breathe deeper, perspire and experience increased body temperature, which will improve your overall fitness level.

The health benefits of regular cycling include:
- increased cardiovascular fitness
- increased muscle strength and flexibility
- improved joint mobility
- decreased stress levels
- improved posture and coordination
- strengthened bones
- decreased body fat levels
• prevention or management of disease
• reduced anxiety and depression.

C. RECREATIONAL WALKING

Walking for recreation or fitness is **differentiated** from hiking by its shorter distances, less challenging settings, and the lack of need for specialized equipment. Walking can simply be an unorganized meander around a local **park** or trail for relaxation or a daily **regimen** of several miles that is undertaken for **health** benefits.

Walking is a simple way to improve overall wellbeing and reduce the chances of developing the health concerns associated with inactivity.

- Walking is free and can be done almost anywhere
- Walking is a form of exercise which is within the physical capabilities of many people
- Walking may be a more realistic challenge than other more vigorous forms of exercise
- Walking can be integrated into people's lifestyles relatively easily
- The level of impact is low and strain on the feet and joints is minimized thus making the risk of injury very low

*Increasing physical activity through walking is associated many health benefits including:*

- Reducing the risk of coronary heart disease
- Lowering blood pressure
- Reducing high cholesterol
- Reducing body fat
- Enhancing mental wellbeing
- Increasing bone density
- Reducing the risk of cancer of the colon
- Helping to control body weight
- Helping osteoarthritis
- Helping to increase flexibility and co-ordination

D. WEIGHT TRAINING

The basics of weight training

Building and maintaining muscle is necessary for all of us, especially as we age. And the earlier we start, the better.

According to the **American Council on Exercise**, most adults lose nearly a half pound of muscle per year starting around age 30, mostly because they aren’t as active as they were when they were younger. **Losing muscle** at the same time that metabolism starts to slow down is a recipe for **weight gain** and the health issues that can accompany it.

Building stronger muscles isn’t just about vanity, either. According to the **Mayo Clinic**, strength training not only helps with weight control, but also stops bone loss and can even **build new bone**.

This can reduce the risk of fractures from **osteoporosis**. It also improves balance and boosts energy levels.
A significant amount of evidence exists to support the overall health benefits of strength training. And there’s been some quite convincing research on the subject recently:

- A study published in Cancer Epidemiology Biomarkers and Prevention suggested that the more muscle men have, the lower their risk of death from cancer.
- A study published in BMJ suggested that weight training can improve long-term balance in older adults.
- A 2017 study in the Journal of Endocrinology suggested that having muscle can improve insulin sensitivity and glucose tolerance.

**How much weight is best?**

The amount of weight you use depends on how many repetitions you’re aiming for. You want to lift enough weight so that the last repetition is really tough and you feel like you couldn’t do one more. Naturally, you’ll need to use a heavier dumbbell for 6 repetitions than you will for 12, even though you’re doing the same exercise.

Never lift so much weight that it causes pain. You are better off lifting too little than too much as your body gets used to weight training. Also, unless you are working out with a spotter, use machines with safety stops in place to prevent injury.

**Safe and effective strength training**

People do the exact same routine in the exact same order for years. It can be comforting to master your program, but the problem is that your muscles adapt and get bored — and so will you.

Every six to eight weeks, tweak your workout. Change things like the number of sets and reps, rest periods, angles, sequence, and type of equipment. Also keep the following tips in mind for a safer and more effective workout.

- **Never skip a warm-up**
  It’s tempting to go straight from the locker room to the bench press, but you’ll be able to lift more if you warm up your muscles with five minutes of aerobic exercise. Also, go easy on your first set of each strength-training exercise.

- **Don’t let momentum do the work**
  When you lift weights too fast, you develop momentum, which can make the exercise too easy on your muscles. People are especially lax on the return phase of a lift: they’ll often hoist the dumbbells up slowly and then let them come crashing down.
  To guard against that, take at least two seconds to lift, pause for a second or two at the top of the movement, and take a full two seconds to return the weight to the starting position.

- **Don’t hold your breath**
  People often forget to breathe when they lift. You need as much oxygen as possible when lifting. Holding your breath or taking breaths that are too shallow can increase your blood pressure and zap your energy. Breathe through your mouth rather than your nose.
  For most exercises, exhale when you lift or press the weight and inhale when you lower it. For exercises that expand your chest cavity (such as upright or seated rows), it’s more natural to inhale as you lift and exhale as you release.
Mix it up
To keep making gains, you must vary your routine every six to eight weeks. For instance, increase the amount of weight you lift (increase by no more than 10 percent at a time), increase the number of repetitions, and reduce the rest time between sets.
How many repetitions are enough? You should be lifting enough weight that the last two or three repetitions are very challenging. For most people that’s in the 12-to 15-pound range.
With a good strength-training routine, you may see results in just a few short weeks. Keep up the effort, and more-defined muscles, better balance, and improved overall health will be the result.

E. STRETCHING AND RELAXATION

11 Basic Stretches for Relaxation, Recovery and Flexibility

There’s nothing like a good stretch to refresh the body and reduce stress. But the benefits go way beyond relaxation: The act of stretching has also been shown to improve range of motion, boost energy and increase blood flow through the body.
"In addition to that good feeling, the act of lengthening the body or limbs in a consistent stretching program will produce large gains in flexibility and joint movement," notes certified personal trainer Jen Mueller.
Whether you're a runner, walker, spinner, weight-lifter or all of the above, a post-workout stretching routine also helps to prevent injury and aids in the recovery process. "The more conditioned your muscles and tendons are, the better they can handle the rigors of sport and exercise, and the less likely that they’ll become injured," Coach Jen points out.
But even with all those excellent reasons to stretch, many of us are guilty of skipping it. When schedules are tight and we’re hard-pressed to squeeze in a workout, it's easy to focus on the "important" (i.e., calorie-burning) part, with intentions to stretch later. But then later never comes, and our muscles remain stiff and sore—all the way up until the next workout.
It’s time to break the non-stretching cycle! It only takes a few minutes to give your muscles some much-needed TLC. Start with this basic routine of static stretches, the most common types of fitness stretches that are held in a fixed position for anywhere from 10 to 30 seconds.
Coach Nicole recommends holding each stretch for 15 to 30 seconds, repeating two or three times, depending on how you feel. Remember to warm up first and never stretch to the point of pain.

Neck Stretch
- Begin in a seated position with your legs crossed or in the butterfly position.
- Bring your left ear down toward your left shoulder and hold. Use your hand to gently guide the head if desired.
- Roll your head down toward the ground, bringing your chin to your chest. Hold and then roll your head to the right and bring that ear to your right shoulder. Inhale and exhale in a slow and controlled manner.
- For a deeper stretch, extend the arm opposite the ear down toward the ground and hold. You should be relaxing your neck muscles and using the weight of your head for this stretch. Do not attempt to force your head lower with your neck muscles or your hands. Stop immediately if you feel any discomfort.
What’s More?

Task 4: Copy and answer the following questions on your Study Sheet. You can answer the question in a paragraph form 5-10 sentences each number.

1. What is *Macro-traumatic injuries* and *Micro-traumatic injuries*?
2. *Share your experience.*
   Have you experienced having an injury? How will you categories your injury from macro-traumatic injury and micro-traumatic injury? Elaborate your answer. What activities you did to restore your strength and condition after rehabilitation?

What can I Engage In?

Task 5: Watch a video from YOUTUBE entitled “4 Key ACL Swimming and Water Exercises After Surgery to Accelerate Your ACL Tear Recovery”. Write down on your Study Sheet the 4 Highly Effective Swimming Exercises and its Functions where in it can be helpful in ACL rehabilitation program.

[Click Here](https://www.youtube.com/watch?v=3OoILnL4ROo)

Task 6: A 6-Week Cycling Training Plan for Speed, Strength, and Endurance

This is a six-week, step-by-step cycling training plan which is perfect for new riders, but it also works just as well for intermediate riders. The workouts are designed to challenge your muscles and cardiovascular system and build your abilities on the bike in a carefully calibrated (but relatively short) amount of time. The more you focus and follow along, the greater the results. About those results: You’ll feel stronger, more energetic, sharper, and happier. And there’s a good chance you’ll see some change on the scale, too. So, pull your bike out of the garage and join the ride.

*Note: This is just a suggested activity. You can use and follow this training program if you have plan for a bicycling ride.*

<table>
<thead>
<tr>
<th>ZONE</th>
<th>ZONE 1</th>
<th>ZONE 2</th>
<th>ZONE 3</th>
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<td>INTENSITY</td>
<td>EASY</td>
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<td>SPEED</td>
<td>8-12 mph</td>
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**Week 1:**

This week’s workout is all about getting you out there on the road. It will help you gain confidence in basic bike handling and control your efforts on rides.

**Week 2:**

This week’s workout helps you gain confidence using your gears to control your pedaling cadence and effort, so you’ll feel more comfortable tackling longer rides. For more experienced riders, pushing against bigger gears and spinning rapidly in smaller ones helps you gain strength by working different muscle groups.

**Week 3:**

This week’s workout emphasizes bike-handling skills and pedaling at a smooth and steady pace. It will help you feel comfortable coasting through turns smoothly and taking corners like a pro.
**Week 4:**
At first it may feel unnatural to ride at 90 or 100 rpm, but before long you’ll notice that a cadence above 80 feels like less work, which is helpful for longer rides. This workout makes those higher-rpm efforts more comfortable and teaches you to use cadence to control your effort. Don’t sacrifice proper form during this segment of the workout. If you start rocking at the hips or flailing at the knees, lower your cadence until you’re in control, then try again.

**Bicycling**

**WEEK 5**
**EXPAND YOUR HORIZONS**
(FLAT TO GENTLY UNDULATING TERRAIN)

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<th>What To Do</th>
<th>Intensity</th>
<th>How Long</th>
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<tr>
<td>Warm Up</td>
<td>Zone 1-2</td>
<td>5 minutes</td>
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<td>Increase pace/intensity</td>
<td>Zone 2</td>
<td>10 minutes</td>
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<td>Increase pace/intensity to tempo</td>
<td>Zone 3</td>
<td>10 minutes</td>
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<tr>
<td>Ease back on the intensity</td>
<td>Zone 1-2</td>
<td>2-5 minutes</td>
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<tr>
<td>Increase pace/intensity to tempo</td>
<td>Zone 3</td>
<td>10 minutes</td>
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*Ease back and finish with light pedaling going home.*

**Total Time:** 55-60 minutes

**What You’ve Done**
This workout conditions your lungs and legs to withstand the challenges of maintaining a steady effort and gets you ready to meet the demands of longer, harder rides.

**WEEK 6**
**GO ABOVE AND BEYOND**
(UNDULATING TERRAIN, PREFERABLY WITH A MODERATE HILL)

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<th>What To Do</th>
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<tr>
<td>Warm Up</td>
<td>Zone 1-2</td>
<td>5 minutes</td>
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<tr>
<td>Pedal briskly</td>
<td>Zone 2</td>
<td>15 minutes</td>
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<tr>
<td>Shift and stand seconds</td>
<td>Zone 2-3</td>
<td>30 to 60</td>
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<tr>
<td>Sit and pedal</td>
<td>Zone 2</td>
<td>2 minutes</td>
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*Repeat standing-and-sitting sequence six times (if you can do it on some inclines, even better)*

| Pedal briskly               | Zone 2    | 15 minutes|

*Finish at the pace of your choice going home.*

**Total Time:** 45-50 minutes

**What You’ve Done**
Standing gives your legs a break and helps you up steep hills because you’re putting all your weight into your pedals—but it also raises your heart rate because your upper body has to work harder to support your torso and keep you balanced. This week’s workout will boost your fitness and riding skills.
Task 7: Walk at Home

PROCEDURE:

1. Watch the video link below.
2. Write down the different walking movements to be used later.
3. Get your Resting heart rate and record it.
4. After watching the video do the walking activity at home for about 10 minutes.
5. Get your pulse rate and record it.

RESTING HEART RATE _______________
TRAINING HEART RATE ____________

https://www.google.com/search?bih=597&biw=1242&hl=en&ei=N3IMX870IIiAoATS7IzgAw&q=walking+exercise+at+home&oq=walking+exercise&gs_lcp=CgZwc3ktYWIQARgB MGgIAUAgAGgAOGgIAYgAgAgUIAgIUDgU6BQgAEBYQHlCugJzY5ek8jY1J4PGgCcAB4AIABqQOJAbYbkgEKMC4xNC4vLjAuMpgBAKABAaoBB2d3cy13aXq4aXqAQ&Mslnc=r workflow-1wBQAQ&es_sm=156&es_sm_skiplst=0&es_sm_skiplst_str&ei=N3IMX870IIiAoATS7IzgAw#q=walking+exercise+at+home& biw=1242&bih=597&hl=en&ei=N3IMX870IIiAoATS7IzgAw&ved=0ahUKEwi2miTKEI7VAhWaO8gAHTj-BysQ4dUDCAs#fpse=1

Task 8: Beginners Body Weight Circuit Workout

https://www.nerdfitness.com/blog/beginner-body-weight-workout-burn-fat-build-muscle/

This is the Beginner Bodyweight Workout (3 Circuits):

- 20 Bodyweight squats.
- 10 Push-ups.
- 10 Walking lunges (each leg).
- 10 Dumbbell rows (use a milk jug or other weight).
- 15 Second Plank.
- 30 Jumping jacks.

From the data given above “Beginners Body Weight Circuit Workout (3 Circuits)” create a simple training program using the FITT Principles. Write your answer on the center of the sample worksheet. Copy and answer the activity given below on your Study Sheet.
**Task 9:** Watch this video from Youtube if you have time. You can apply this relaxation routine if you feel stress.

Relaxation Routine - Daily Stretching Routine to Combat Stress  https://www.youtube.com/watch?v=s_HIQhYsGfc

**What I Have Learned?**

**Task 10:** Copy and answer this to your **Study Sheet**. What you have learned from the lesson and reflect on the importance of an activities restoring strength and condition of participants after rehabilitation.

*I learned that* ____________________________

*I realized that* ______________________________

**Assessment**

**Task 11: POST-TEST**

*Direction: IDENTIFICATION.* Identify the following statement below. Write your answer on your **Study Sheet**.

1. Is the restoration of optimal form (anatomy) and function (physiology).

2. Are injuries and disorders that affect the human body's movement (i.e. muscles, tendons, ligaments, nerves, discs, blood vessels, etc.)

3. This injury are usually due to a strong force – such as a fall, accident, collision or laceration – and are more common in contact sports

4. This injury are chronic injuries that result from overuse of a structure such as a

5. This training helps strengthen muscles and ligaments, improves your cardiovascular fitness, and serves as a safe and effective workout, all while gently supporting your body, particularly injured areas.

6. It is a healthy, low-impact exercise that can be enjoyed by people of all ages, from young children to older adults. It is also fun, cheap and good for the environment.

7. This exercise is a simple way to improve overall well-being and reduce the chances of developing the health concerns associated with inactivity.

8. This training is important in building lean muscle to help your body perform and look better.

9. It is a form of physical exercise in which a specific muscle or tendon (or muscle group) is deliberately flexed or stretched in order to improve the muscle’s felt elasticity and achieve comfortable muscle tone

10. This principle dictates that athletes need adequate time to recuperate from training and competition.
References

https://www.physio-pedia.com/Rehabilitation_in_Sport
http://walkbc.ca/get-walking/benefits-walking
https://www.britannica.com/topic/walking-recreation
https://www.healthline.com/health/fitness-exercise-weight-training#safety
https://www.youtube.com/watch?v=s_HIQhYsGfc
https://www.youtube.com/watch?v=3OoILnL4ROo
https://www.bicycling.com/training/a20024513/training-plan/
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