



YOUR GUIDE TO
**ACUTE INJURY
MANAGEMENT:**
P.R.I.C.E. PRINCIPLE

MUSCULOSKELETAL

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Introduction

Please take note of the following before starting any of the exercises in this guide:

- The information contained in this guide is intended to assist in managing your recovery.
- This guide is based on the latest medical research in the field and contains the best advice available to the best of our knowledge.
- This guide is complementary to other medical services and is not intended as a substitute for a health care provider's consultation.
- Never disregard medical advice or delay in seeking it because of something that you have read in this guide.

● Many people have found quick and lasting relief from their pain by acting upon the information provided, but everyone decides for themselves what to do with this information. Should you doubt a particular exercise in your situation, please consult your health professional.

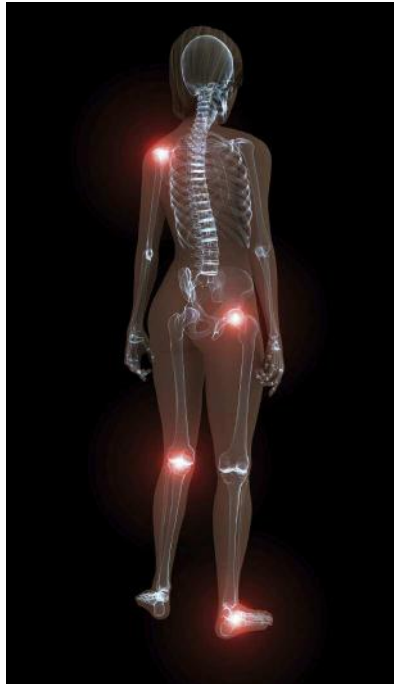
When consulting your health professional, it is wise to take this guide with you to show them.

P.R.I.C.E. PRINCIPLE

Many people sustain acute injuries everyday while participating in sports or general day to day activities. Immediate first aid treatment can prevent complications and assist in a faster recovery and a faster return to normal activity. The P.R.I.C.E principle should be used within the first 24-72 hours immediately after the injury. The goal during this time is to control and decrease the amount of inflammation in the injured area, prevent further injury and of course, reduce pain.

Inflammation is defined as a localised protective reaction of tissue to irritation, injury, or infection, characterised by pain, redness, swelling, and sometimes loss of function.

During the healing process, inflammation is required to allow blood, which includes fluid, plasma proteins and leukocytes (good cells), to infiltrate the injured area and begin removing or repairing the injured tissues. In essence, a small amount of inflammation is imperative to the recovery process however significant inflammation is harmful to your recovery - so your aim should be to reduce or avoid the amount of inflammation in the injured area.



The acronym **P.R.I.C.E** stands for the following:

- **Protection**
- **Rest**
- **Ice**
- **Compression**
- **Elevation**

PROTECTION

The purpose of protection is to avoid further injury to the area by protecting the injured or damaged structures. The type of protection used varies depending on the injured area. The following are examples of possible protection:

- **Bandages**
- **Splints**
- **Slings**

- **Strapping/Taping**
- **Braces**

These devices are applied so that the injured structures are protected from movement or collisions which may cause further damage.

It is vital to protect the body part from further injury.

REST

Rest is the second component of the principle. The purpose of resting is to allow the body's own healing processes to occur naturally without being impeded by movement of the injured area. Rest does not mean complete immobilization for weeks however it is very important over the first 2-3 days. Any increase in movement results in increased circulation to the area which in turn may result in further damage and swelling to the injured tissue.

Whether you have suffered a sprain or a strain, the actual injury involves tearing of either muscle, tendon or ligament fibers which then involves internal bleeding.

The body's first reaction is to begin the repair process by stopping the bleeding at the injury site. This involves clot formation around the injured tissues. Rest is important to allow the clot formation to occur and prevent any clot disruption after it has formed.

ICE

This is the third component in the P.R.I.C.E principle. When an acute injury first occurs, bleeding, inflammation, swelling and pain must all be controlled. Ice should be applied as soon as possible in order to cool the tissues, reduce their metabolic rate and nerve conduction velocity and cause vasoconstriction of the surrounding blood vessels. This all leads to pain relief.

There are many options available when it comes to cryotherapy (Ice therapy):

- Ice packs
- Ice baths
- Ice massage
- Gel packs
- Chemical cold packs
- Vapo-coolant sprays (i.e Bio-freeze or Deep freeze)
- Or a pack of frozen vegetables from your freezer will do



The ice should remain in contact for up to 20 minutes at a time and be re-applied regularly, every 2-3 hours. In the case of submerging the injured part into an ice bath, 5-10 minutes will be sufficient.

Always remember to wrap the ice/pack in a towel as direct contact to the skin may burn and damage your skin.

COMPRESSION

Compression is one of the most important parts of the PRICE principles. Applying some type of compressive wrap (i.e Tubi-grips which can easily be purchased from your local pharmacy or supermarket) to an injured area can greatly reduce the amount of initial inflammation

and in turn, prevent a prolonged rehabilitation.

Compression helps to control swelling by not allowing extra fluid to collect or gather in the spaces between the cells. This leads to less tissue death and less time required for recovery.

ELEVATION

Elevation is the final component of the PRICE principles. It simply refers to keeping the injured body part in a position higher than or equal to the level of the heart. This allows the swelling and bleeding to drain back into the body systems but using gravity.

For an ankle sprain or knee injury, this would mean propping your leg up while lying down or sitting. This may be difficult when it comes to a hip injury - but try the best you can!



NO H.A.R.M. PRINCIPLE

There are certain things that should be avoided completely within the first 72 hours following an injury - these factors would cause further damage and H.A.R.M your recovery process:

- Heat
- Alcohol
- Re-injury/Running
- Massage

HEAT causes further bleeding in the injured area

ALCOHOL increases further bleeding further swelling, further bleeding and further damage

RE-INJURY/RUNNING causes further injury and as above, leads to further bleeding, swelling and further pain

Heat may be applied following the 72 hour period as it will encourage blood flow into the area and cause an influx of cells required to rebuild the injured tissues. Additional effects of heat include:

- Relieving muscle tension and spasm
- Reduce pain
- Reduce joint stiffness
- Increase flexibility



Summary

Acute injury results in tearing to the soft tissues in the area which leads to:

BLEEDING
INFLAMMATION (swelling)
PAIN



Immediate application of the P.R.I.C.E principle:

PROTECTION
REST
ICE*
COMPRESSION
ELEVATION



*Ice should be applied immediately for 20 minutes every 2-3 hours. Objectives of applying ice are to:

COOL THE TISSUES IN THE INJURED AREA
REDUCE BLOOD FLOW
REDUCE METABOLIC RATE
REDUCE NERVE CONDUCTION
REDUCE PAIN



Do no H.A.R.M

Avoid the following within the first 72 hours:

HEAT
ALCOHOL
RE-INJURY/RUNNING
MASSAGE



PRECAUTIONS WHEN USING ICE AND HEAT

DO NOT use ice packs or heat packs under the following circumstances:

- **If you have Diabetes**
- **If there is an infection**
- **Areas known to be in poor condition; have reduced circulation or have poor sensation to heat or cold**

Non-steroidal anti-inflammatory drugs



advise whether you are taking any other medications as these may react with the NSAID and cause unnecessary and unwanted side-effects.

CAUTION: NSAIDS should NOT be used within the first 24-48 hours after an acute injury and should rather be used in the short term and not as a long term solution.

USES

They can be used in the symptomatic treatment of the following conditions:

- Rheumatoid Arthritis
- Osteoarthritis
- Inflammatory arthropathies (e.g. ankylosing spondylitis, psoriatic arthritis, Reiter's syndrome)
- Back pain and sciatica
- Sprains and strains
- Acute gout
- Dysmenorrhoea (menstrual pain)
- Metastatic bone pain
- Headache and migraine
- Postoperative pain
- Mild-to-moderate pain due to inflammation and tissue injury
- Pyrexia (fever)
- Renal colic (Pain from kidney stones)

Non-steroidal anti-inflammatory medications are drugs with analgesic (pain relief) and anti-pyretic (fever reducing) effects which usually also have anti-inflammatory effects when taken in higher doses or used over a period of time.

These are usually prescribed by your General Practitioner and can be very effective in treating acute and chronic conditions where pain and inflammation are present.

It is advised to consult your GP or Qualified Pharmacist with regards to which NSAID is best for you and please

CONTRAINDICATIONS

NSAIDs cannot be used in the following cases:

- Any allergy to aspirin or any of the NSAIDs
- During pregnancy
- During breast feeding
- If you are taking blood thinning agents (anti-coagulants)
- If you suffer from any blood clotting defects (coagulation problems)
- If you have an active peptic ulcer

Care should be taken when using the NSAIDs in the following conditions:

- Asthma (It is advised to avoid Ibuprofen)
- Liver impairment
- Kidney impairment
- Heart impairment

FORMS

These drugs are available in nearly every form:

By mouth - they come in tablets, capsules or medicines

Injections - this form is used for the pain after surgical operations and also is very effective for the treatment of pain produced by kidney stones (renal colic)

Suppositories - these are often used for post operative pain and sometimes in chronic pain when the patient is unable to take medication by mouth

Creams and Gels - these are not felt to be as effective, but some people do get considerable relief from their use

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Contact us

If you have any uncertainties or queries regarding the information, please do not hesitate to contact us on:

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