Work in a compressed air environment, such as tunnelling work may result in compressed air illness and barotrauma related to changes in air pressure.

**Do you know ……**

- What is compressed air illness and barotrauma?
- How to stay healthy?
- When to seek medical attention?

**What is compressed air illness?**

What happens when you pull open the cap of a can of fizzy drink? You can see air bubbles being released. The same happens when you move from a compressed air environment to the outside. Nitrogen bubbles dissolved in your bloodstream during compression may be suddenly released when the decompression is not carried out correctly. These bubbles can cause compressed air illness, resulting in pain in the joints and/or muscles (bends). In more serious cases, you may develop a heart attack or stroke and your bones may be damaged (dysbaric osteonecrosis).

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*X-ray showing lucent area in bone*

*Dysbaric Osteonecrosis*
What is barotrauma?

You can also develop pain inside the air spaces of the ear, face or chest. This condition is called barotrauma and is caused by the expansion or contraction of air in these spaces. You are at greater risk of developing barotrauma if you have a cold, sore throat, ear or chest infection.

Ear Pain from Aural Barotrauma

How to stay healthy?

Medical examinations

You will need to be certified fit by your designated factory doctor.

The medical examinations required are as follows:
  a) Within 30 days before employment
  b) At least once every 3 months for working pressures below 1 bar and at least once every 4 weeks for working pressures at or above 1 bar.

In addition, you will need to be re-examined within 3 days before starting work if you have:
  a) Not worked in compressed air environment for more than 14 consecutive days
  b) Suffered from a cold, chest infection, sore throat or earache
  c) Suffered from any illness or injury requiring absence from work for more than 3 consecutive days.

Good Work Practices

A. During compression
  • Breathe normally
  • Follow the instructions of the man-lock attendant
  • Pinch your nose and try breathing out. You should feel air leaving your ears (Valsalva manoeuvre)
  • Always enter the man-lock with an experienced compressed air worker if it is your first time
B. During decompression
• Breathe normally, do not hold your breath
• Wait for the man-lock attendant’s signal before leaving the man lock
• Change your position frequently to improve blood circulation

Always inform the lock attendant if you develop pain, discomfort or dizziness!

C. After decompression
• Remain at the worksite for at least one hour, if the working pressure is one bar or more
• Do not take too hot or too cold a bath/shower
• Do not fly, dive or engage in strenuous exercises (like jogging or swimming) for at least 24 hours

In addition, you should:
• Have adequate rest in between shifts
• Drink plenty of water to prevent dehydration

Do not:
• Work in compressed air if you have a cold, sore throat, earache or chest infection
• Drink alcohol or fizzy drinks before or when working in compressed air

When to seek medical attention?

Report to your supervisor and arrange to see the medical lock attendant or doctor if you:
• Feel unwell before, during or after compressed air work
• Develop aches, joint pains or skin rashes after decompression

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