

# **Physiotherapy skills in homebased care**

**Resource book for rural village health workers**



**Help for all - Physiotherapy for all**



# 1. Introduction

With this booklet we would like to offer health carers in rural communities the option to look up basic physiotherapy skills that they have learnt in training workshops - to apply physiotherapy in home based care. Even more detailed information can be looked up on [www.physioinlesotho.ch](http://www.physioinlesotho.ch), a reference database. We have seen that physiotherapy is a good instrument for carers in villages to help treating ill people, or as rehabilitation after operations or for bedridden elderlies. Physiotherapy skills are a useful addition of skills for caregivers in rural communities.

In some Sub Saharan African countries there is only 1 qualified physiotherapist for about 250,000 citizens. With the training of village health workers and traditional healers in applying basic physiotherapy skills the carer workforce is essentially enlarged.

**Content:** what this booklet is about

Description of basic physiotherapy skills, for simple, safe and effective treatments by village health workers, family members and other carers in the community.

**Audience:** this booklet is for whom

For village health workers, traditional healers, family members caring for ill people and other carers, who work together and are involved in the local health system

**Purpose:** why this booklet

Rural and resource limited areas are usually connected to district hospitals that are far away. They are very rarely in health centers, where physiotherapy is offered. Most of the villages don't have access to any physiotherapy. This may be because the patient can not be transported over long distances on bad roads or there is not sufficient funding to pay for the transport. Physiotherapy is often more effective if it is done more frequently – and this may add to the transport problems.

## Help for all - Physiotherapy for all

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# First Part

## 2. Lifestyle

### What keeps us healthy?

The basics, as communicated by PHC, are

- hygiene,
- fresh water,
- housing,
- nutrition,
- sanitation, etc.

Lifestyle and health creating factors, as listed below, are also significant to good health.

We ask ourselves what makes us sick, we can also ask ourselves what keeps us healthy.

For example these 5 tools to build up health:

#### **Daily moving in fresh air and light**

Daily outdoor movement in fresh air and sunlight is essential for maintaining health, particularly early morning and late afternoon sun.

#### **Rest and good quality sleep**

„Good quality, regular and sufficient sleep keeps the doctor away“, is an old saying. Our body and our psyche need good sleep. The light and distraction of TV, mobile phones and computers has been shown to be bad for having a good quality sleep.

#### **Adequate nutrition**

An office worker (soft labour) has different nutritional needs than a hard working, soil digging farmer. The office worker needs much less energy dense food than the farmer. An elderly person has other needs, as also a sick person lying in bed. It is important to eat what the body needs. Too much sugar, too much carbohydrates, soft drinks are not helpful to maintain a healthy body.

Healthy foods are vegetables, protein (meat and fish) and fruit. The amount of food is important, as too much food will make a person gain extra weight – which puts a strain on the heart and the joints.

Vegetables, meat and protein provide all the essential ingredients that the body needs to function well, and to heal from any illness or injury.

### **Positive community experience**

Being connected to a community - the opposite to feeling lonely - is protective for our soul. Feeling secure and being active and considered as a member in a community is an important health factor.

### **Nourishing relationships**

Having someone to talk to is a human necessity, to share pain and joy and other feelings. Negative relationships can harm our health, especially when you are sick. Human contact and conversations are very important for feeling well. Don't condemn or stigmatise ill people. They need your relationship and your contact with them to nurture and encourage them.

### 3. Healthy Movement Helps

Being healthy and moving every day helps in many ways. Our body exercise can:

- increase blood circulation
- improve our breathing
- strengthen our cardiac activity
- increase our body fitness
- strengthen our balance
- stimulate hormones
- boost happiness

We are used to everyday movements, like going from one place to another. Our body benefits even more from movements that we practice in joyful exercises, paying attention to our special needs.

#### **How much movement is enough**

Move every day and move wherever you can. At least 30 minutes daily movement and exercise are helpful. Whenever possible, long sitting hours are to be avoided. If your daily exercise brings you to a short sweating period, or a bit breathless, you benefit even more.

#### **Movement for the elderly**

In old age daily movement is beneficial and probably even more important than for young people. Elderly people tend to sit and rest a lot, especially when they are not actively engaged in the family or community. Daily exercising while sitting on a chair, lying on a bed and whenever possible, even outside in fresh air, can become a wonderful daily routine. The active elderly people regularly report to have less pain, feel more stable while walking, feel fresh and in better mood, than those sitting and resting the whole day.

#### **Movement for sick people**

Chronic patients benefit from exercising. Special exercises, appropriate to their condition, help to gain better health and prevents some of the complications due to their illness. For example, bedrest patients need exercise to avoid bedsores, swollen legs and respiratory problems. TB patients, while under medical treatment, clear their lungs and airways by performing respiratory exercises.

If the sick person is unable to move by themselves, they may need someone else to assist them with moving their arms or legs, walking and balance.

Only patients with high fever and acute high blood pressure should not perform active physical movements. Every condition has its appropriate exercise. As there is a science and technology to create external wellbeing, there is a whole dimension of science and technology for inner wellbeing. This is taught in the village health worker training for applying physio skills in home based care.

## 4. Physio skills in home based care

Some of the physiotherapeutic techniques and practices are taught in workshops about physio skills for home based care. Village health workers learn to apply physio skills where there is no physiotherapist. Many of the techniques can be taught and applied on a village level and therefore reach many patients, who can benefit to improve their health. The following practices are helpful in home based care.

### **Medical Massage**

with ointments and oils for musculoskeletal pain, cramps, and to improve circulation.

### **Exercise**

specific exercise in lying, sitting, standing and walking, with many different aims and objectives

### **Cold and Hot Packs**

simple applications with towels, hot or cold water for relaxation, pain reduction and to reduce swelling

### **Water Applications**

different herbal bath applications, like sitting bath, foot bath, full body washing, for relaxation, pain relief, improvement of circulation and improving immune response.

### **Steam Inhalation**

the conventional steam inhalation with local herbs for clearing airways, loosening sputum, relaxation and reduction of inflammation and increasing immune response

**Passive Movements and Stretches**

Moving someone's legs and feet, and arms and hands helps to keep the joints flexible and the muscles supple. If a muscle is tight, it is helpful to gently stretch this muscle over time so that it doesn't become permanently tight

**Weight Bearing**

Where possible it is good for someone to stand up. It is beneficial for their bones to bear their weight, and it is also stimulating for the bowels and bladder to be upright. They may require assistance to stand up – either from a health worker or equipment such as a walking stick or frame.



## 5. Local herbs around your house

There are many local herbs, well known to villagers, which can be helpful in the prevention and cure of simple daily health problems. Some of them are used in the treatment later discussed in this booklet. A proper and safe use of these herbs is essential.

Protection of these plants is as important as harvesting them. Ideally we plant a few of each in our garden, where they are protected from animals and are well looked after.

Appropriate harvest and storage are discussed in a separate booklet.

### **Lengana, *Artemisia afra*, wormwood**

Generally Lengana has an antibiotic, antiviral, antimycotic and antiinflammatory effect. It can be used for steam inhalation, sitting bath and full body wash. Together with oil and beeswax it can be prepared as an ointment for skin problems. As tea it is helpful to reduce internal parasites, common cold and other feverish conditions.

### **Phefo, *Helichrysum*, strawflower, Imphefo**

Phefo is a strong medicinal plant. It has antiviral and muscle relaxing properties and lightens up the depressed mood.

Phefo is used as tea, smoke inhalation, and used in a gentle way as steam inhalation and also for full body wash.

### **Koena, *mentha longifolia*, wild mint**

Is well known in every household throughout Africa as a medicine for respiratory problems. As a tea it also helpful to calm down a nervous stomach, and can be used as a spice in food. Koena tea, and also inhalation, opens spastic bronchi and clears the airways.

A bunch of leaves in the home keeps flies away.

### **Boloukomo, *Eucalyptus globulus*, Bleikom**

The Eucalyptus tree is widely spread, and the use of their leaves in different forms of inhalation are medicinal for many respiratory problems. It can also be taken as a tea.

### **Polisa, *Foeniculum*, wild fennel**

Wild fennel seeds or the leaves can be used to make a tea or used as a spice. It helps digestion, to reduce air in the bowels and to increase the milk of breast feeding mothers.

## **How to harvest and store local herbs**

It is most important to identify the correct plant.

Get help from someone who knows them, and learn properly. Some plants look very similar, but are not the same and might even harm your health.

There is the right time to harvest, not too early - not too late.

For example, in the case of *Artemisia afra*, Lengana: the branches are harvested when they become slightly dried, by touching them they feel sticky and oily.

Generally the leaves are dried in a clean environment, in the shade, protected from animals, dust and dirt.

Medicinal herbs are to be dried and also stored out of reach of children, they are not a play toy as they can be harmful if used incorrectly.

Once dried the leaves can be chopped, grinded or grated and stored in a glass or plastic container. These containers must be labelled with the harvest date and the name of the herb. It is wise for the beginner to know just a few herbs well, and how to apply them safely.

## **How to apply herbs safely**

These are the most common practices in applying medicinal herbs:

- steam inhalation
- indoor steaming
- herbal bag inhalation
- pillow case inhalation
- herbal smoke
- warm herbal bath
- warm sitting bath
- full body wash with hot herbal water
- 

Medicinal oils and ointments can be prepared with sunflower oil, dried herbs and beeswax. The formulas how to prepare oils and ointments are found in the appendix of this booklet.

Each of the applications has its technique and a defined procedure. Follow the guidelines of good practice and observe the patients reaction.

### **How to prepare healthy and safe herbal teas**

The plants have to be clean, harvested from a clean field or garden (not with animal dung), harvested and prepared with clean, washed hands as described above.

It is essential to follow the dosage guidelines, appropriate for children, adults and elderly.

Always use boiled water to eliminate remaining impurities on the herbs.

Avoid experimenting with quantities, dosages and mixing up different herbs - it can be harmful. Generally herbal teas are taken for 3 weeks, not longer.

To keep on the safe side - if you see adverse reactions from patients, stop the treatment with herbal tea.

Following the guidelines you will very rarely see negative reactions.



# Second part

## 6. Helping patients with Physio skills

### Musculoskeletal disorders

#### Neck and shoulder pain



#### **Why do you get neck and shoulder pain**

Bad, slumped posture is the most common cause.

Other causes can be degenerative changes of the cervical spine, tight muscles due to stress or an injury to the neck at some time.

In some feverish conditions, and acute hypertension crisis, neck and shoulder pain also can occur. In these conditions massage is to be avoided.

Some patients suffer from neck pain after an accident, for example whiplash - to treat such a patient first contact the doctor or nurse in charge, and

exclude any bone damage, or nerve compression .

#### **What can the patient do by himself**

Patients can always exercise, perform good posture and self massage their neck. Show these patients how they can help themselves. To get results it is important that the patient participates.

#### **Applying medical massage**

The patient with neck pain can be given a massage either in sitting or lying on the back position. The patient should be comfortable and relaxed. If possible take off blankets and jackets. You can massage the dressed patient, specially in wintertime. If you have the option to massage the patient directly on the skin with oils, follow the hygienic rules and wear gloves. If it is possible to massage the patient in private and warm surroundings, massaging on the skin is preferable.

The patient sits, begin stroking over neck and shoulder down to arms and back up with both hands. The pressure of your hands should be firm (not



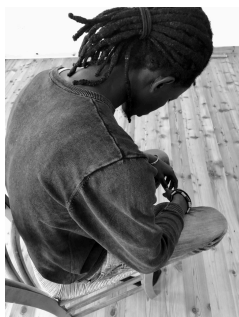
pressing too hard, or too soft!) On the shoulder muscles knead and move like preparing a bread dough. On the side of the neck make circular movements up and down. with circular movements of the thumbs go from the spine to the ears, to both sides. Friction massage with 10 fingertips on the scalp. Finish the massage with the long strokes from back of the head over the shoulders and back.

For chronic pain Peri Peri oil is useful, as well as Lengana-oil (*Artemisia afra*) which has a slight anti-

inflammatory effect.

NOTE: Don't massage if there are open wounds, skin infections, acute high blood pressure or feverish conditions.

## Helpful exercises



Patient sits on a chair, slumps down and comes back to a straight and upright posture. They should grow taller, and gently pull their shoulders back, and their tummy in. Turning head left and right, keeping eyes on same level as if you are following an object on the horizon.

Bend neck to the side as if placing ear on to the shoulder.

Retracting jaws in the direction of the spine, with straight spine, not looking up and down. Self massage with thumbs and folded hands over back of the neck.

## Advice for the patient

Take care to keep your neck and shoulder girdle warm, practice exercise daily. Rub your own neck with Peri Peri oil or Lengana-rub. Avoid prolonged sitting. Maintain good posture – with your spine upright, shoulders back and tummy in.

# Lumbar pain

## Why do you get lumbar pain

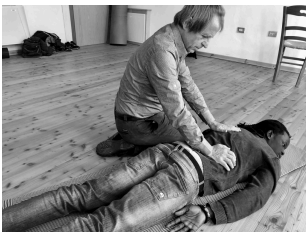
Most often the causes of lower back pain are: heavy labour, bad postural habits, degenerative changes and sometimes after accidents. Acute sudden onset of lower back pain is often due to a mechanical problem or muscle spasms. Rarely lower back pain is due to chronic inflammation or infective diseases like tuberculosis.

## What can the patient do by himself



Low back pain patients can always exercise, perform good posture and apply proper lifting habits. Show these patients how they can help themselves. To get results it is important that the patient participates.

## Applying medical massage



Low back massage is performed in prone position or if necessary lying on side. Introductory massage is stroking over the whole back a few times from top to bottom and back up again. With circular movements of the palm move along the spinal muscles up and down.



With both thumbs push the muscles along the spine to the side and back. With both hands massage from the lumbar spine along the pelvis till you touch the hips, and back again. Close the massage with the same strokes as the introduction.

For chronic pain Peri Peri oil is useful, as well as Lengana-oil (*Artemisia afra*) which has a slight anti-inflammatory effect.

NOTE: Don't massage if there are open wounds, skin infections, acute high blood pressure or feverish conditions.

## Helpful exercises



Lying on the back, the patient lifts their legs on to a chair, breathing gently into their tummy. This position helps the most patients and can be performed even if there is no pain.

Exercise the abdominal muscles by lying on the back, having the knees bent and with the feet on the ground, lifting your head and bringing your fingers to the knee. Lying on the tummy, placing both hands next to the shoulder, pushing up through the hands and performing a backward arch. This exercise is to be performed gently.







Lying on the tummy, hands folded behind the neck, lift up the shoulder and hands and remain in that position for a short time (5-10 seconds). Patient should continue breathing.

Sitting on chair or standing, let your spine slump and come back to an upright posture - grow taller, and gently pull their shoulders back, and their tummy in.

### **Advice for the patient**

Take care to keep your body warm, practice exercise daily, don't stop when you get better. Whenever you have to lift heavy objects perform the proper procedure to avoid hurting the the back – use the strong leg muscles, and avoid bending the back as much as possible while lifting. Avoid prolonged sitting and move as much as possible.

# Sciatic leg pain

## Why do you get sciatic pain

This painful condition originates in the back and extends down to the foot. In most of the cases it is an inflammatory and mechanical problem. If the sciatic nerve is pinched by pressure from the disc, the patient feels pins and needles and/or numbness down the leg and possibly into the foot, muscle weakness can occur and the patient will limp.

## What can the patient do by himself

In the acute stage the patient should rest and seek advice from the nurse or the doctor regarding anti-inflammatory medicines. Avoid sitting for long hours. Patients with sciatic pain should do specific exercises, ensure good posture and avoid prolonged sitting. Show these patients how they can help themselves. To get results it is necessary that the patient participates.

## Applying medical massage

The same type of massage can be applied as with lumbar pain, but performed very gently. Avoid pain during the massage treatment.



Sciatic massage is performed in prone position or if necessary while lying on the side. Introductory massage is stroking over the whole back a few times from top to bottom and back up again.

With circular movements of the palm move along the spinal muscles, up and down. With both thumbs push the muscles along the spine to the side and back. With both hands massage from the lumbar spine on the pelvis till you touch the hips, and back again. In a chronic case you can massage the leg too. Close the massage with the same strokes as the introduction.



For chronic pain Peri Peri oil is useful, as well as Lengana-oil (*Artemisia afra*) which has a slight anti-inflammatory effect. Don't massage if there are open wounds, skin infections, acute high blood pressure or feverish conditions.

## Helpful exercises



Lying on the back, the patient lifts their legs on to a chair, breathing gently into their tummy. This position helps most patients and can be performed, even if there is no pain.

Exercise the abdominal muscles by lying on the back, and squeezing the belly button in towards the spine – hold it tight for 5 seconds while breathing gently. Do

this 5 times.

Then bend the knees up with the feet on the ground, lift your head and bring your fingers to the knee.



Lying on the tummy, hands folded behind the neck, lift up only the elbows, and remain in that position for a short time. Patient should continue breathing.

Sitting on chair let your spine slump only a little bit and come back to an upright posture.

If you can see that the chest of the patient is shifted to one side, gently help the patient to come back to a correct midline position. All exercises are to be always done gently and without pain. In

particular shooting pain in the foot, worsening of numbness and pins and needles should not occur.

**Advice for the patient**

Avoid hard labour and particularly lifting for some weeks. Always exercise gently and slowly. Don't stop exercising when you feel better, go on. Rest twice a day for 15 minutes with the above described position, lying on the floor with legs on a chair. If the doctor prescribes anti-inflammatory drugs, take them as prescribed during the whole period. To be cured from a sciatic problem you need to be patient. You can trust it will get better.

# Chronic respiratory problems

## Why do you get respiratory problems

The most common problems are: colds and flu, bronchitis and sinusitis. Other irritations of the upper respiratory tract can be due to smoking, dust, smoke or other particles in the air. Chronic asthma, pneumonia, TB or other infectious diseases also irritate the respiratory system.

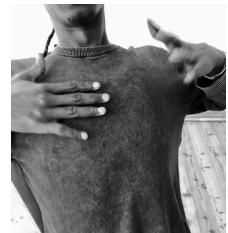
## What can patients do by themselves

The patient can perform daily exercises, deep breathing and cough techniques to clear the lungs. They can do steam inhalations to make the sputum easier to cough out.



They can correct their slumped posture to enable better breathing.

It can be helpful to perform self percussion on the chest and involve family members to do so on the back.



Whatever the cause of the cough, patients must follow the hygiene rules using Kleenex tissues or a sputum mug to avoid spitting on the floor.

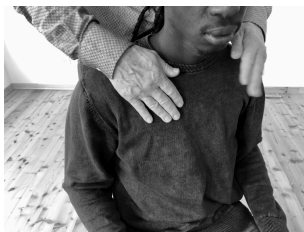
## Applying respiratory treatment

This treatment consists of massage, percussion/vibration and cough techniques, postural and mobilisation exercises. Patient sits on a chair and if the temperature and condition allows, the patient takes

off blanket and shirt, it is not absolutely necessary to treat the patient on the bare skin. If you do, wear plastic gloves. Before, during and after the treatment the patients should follow the guidelines of hygiene, use handkerchiefs and sputum mug. Take care to work in well ventilated rooms, good air flow with fresh air  
Start massaging neck and shoulder girdle to relax the muscles. Use *Artemisia afra*, *Lengana*, ointment or homemade Eucalyptus oil.



Still sitting on the chair, the patient leans forward and rests their elbows on their knees, start percussion on the back. Avoid tapping on the kidneys.



The patient leans back and places their hands on the leg. Then perform percussion on the front chest.

The patient lifts their hand over the head, you assist by holding them, then perform percussion on the side of the chest.



Teach deep breathing exercises and the particular cough technique. In the case of productive cough the patient must use a handkerchief, toilet paper or sputum mug to hold the sputum and dispose of it.



For hygiene reasons stand on the side of the patient, so that you do not breathe in any infective material.

To complete the treatment perform shoulder girdle and arm exercises, and also include stand up and sit down training.

### **Applying steam inhalation and other natural treatments**

A variety of different herbs can be helpful for patients with chronic respiratory problems. There are lots of different techniques that can be applied.

For example Eucalyptus and wild mint are gentle remedies for different types of inhalation. Stronger remedies like *Artemisia afra*, *Lengana* or *Pepho*, *Helichrysum*, are more potent and challenging to the bronchi.

Using a sniffing bag or pocket inhalation is a gentle way to regulate the dose of inhalation during the whole day and also very useful for babies and small children.

Steaming the house purifies the rooms and is a soft type of inhalation for the patient staying indoors.

These two methods using *Koena*, wild mint and *Bleikom*, *Eucalyptus* leaves are indicated for patients who are coughing evenly and easily, and who have sensitive bronchi.

The steam inhalation in sitting, with the head under a blanket is more intense than household steaming. Take care to prevent burns. Never leave a small child to steam under the blanket by itself. The whole duration of steaming under the blanket is around 10 minutes. Add a teaspoon of salt to the water in which you put the herb which is to be steamed and always use the pot only for the same patient, to avoid cross-infection. Change the water and herb for every treatment.

Smoke inhalation: some herbs like *Artemisia afra*, *Lengana*, and *Helichrysum*, *Phefo*, can be burned on glowing charcoal to release the medicinal oils into the air. This technique is helpful for many chronic patients. It should be avoided for patients with sensitive bronchi and asthma. You will recognize these patients coughing

shortly after beginning the inhalation, coughing continuously and may have to leave the room.

A simple way of prolonged inhalation is by putting fresh *Artemisia afra*, *Lengana* and *Koena*, wild mint, in a pillowcase, enabling the patient to inhale the oils during the whole night.

*Artemisia afra*, *Lengana*-ointment and *Eucalyptus*-oil can be rubbed on the chest and even into the nostrils.

To stimulate the immune system a full body wash with hot *Artemisia afra*, *Lengana*, *Helichrysum*, *Pheto* and wild mint, *Koena* water is well known and a beneficial remedy.

Some of the herbal teas help to relax spastic bronchi such as we can find in asthma. For this purpose wild mint or pine leaves are indicated.

Sticky sputum can be loosened and mobilised for example with *Thmye* or *Artemisia afra*, *Lengana* tea. Take care to use the proper dosage, which can be looked up at the end of this booklet, and practice good hygiene.

## Helpful exercises

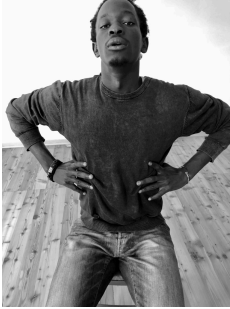


The patient sits on a chair, feet well placed on the ground, in an upright posture. Start rolling shoulders, bringing the arms up while breathing in, taking the arms down while breathing out.

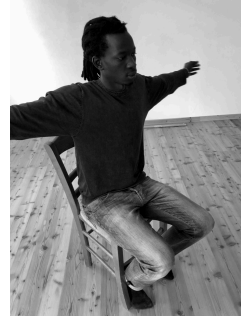


Place hands on each side of the chest, expanding the chest while inhaling and then breathing out all the air in the lungs.





Spread the arms out sideways, like the wings of an aeroplane, turn to the right and then to the left.



Self percussion of the chest.



Humming exercise with exhaling sound.  
Stand up and sit down training.

### **Advice for the patient**

It is very important to keep warm, eat warm food and drink hot tea. Avoid sitting in cold wind.

The old secret of warm feet and legs, which keeps the lungs warm, is beneficial to all respiratory problems.

Always wear dry clothes, and change after sweating. In case of infectious diseases like TB, obeying the proper hygienic rules are essential for the patient and their family members.

Steam inhalation and other natural medicine applications, as written above, are helpful when they are applied regularly

Patients should take the medicines as prescribed by the doctors and nurses and follow the checkups.

## **The TB patient comes home**

Some TB patients are treated in the hospital, for different reasons, others are treated at home.

Whatever the reason why the patient is being hospitalised, have a look at the situation is the patient moderate or advanced in their recovery. Follow the guidelines given by the TB coordinator and encourage the patient to comply with the standard procedures. The patient must never change the medication by himself, problems should always be discussed with the doctors in charge. Many of these chronic patients tend to be passive, sitting around too much and getting stiffer and immobile over time. To avoid complications, Physio skills can help.

### **What can patients do by themselves**

They can apply the different ways of steaming. The patient should be as active as possible. This means that a weak patient can exercise in the bed or on a chair, the patient with moderate recovery can move around and do exercises, and those with advanced recovery can start to do simple work, exercise and go for walks. As soon as the patient is not feverish, a gentle sunbath in the early morning and late afternoon sun is beneficial.

### **Applying steam inhalation and other natural treatments**

A variety of different herbs can be helpful for patients with TB. There is also lots of different techniques that can be applied. The procedures can be looked up in the chapter for chronic respiratory problems. Specific considerations for TB patients are as follows:

Patients with sensitive bronchi can steam with Eucalyptus or wild mint. Those with spastic bronchi should use only wild mint.

Patients with sticky sputum of yellowish/greenish colour should use gentle *Artemisia afra* steam.

TB patients with chronic mycosis in the lungs use steam inhalation of *Artemisia afra*.

Rubbing Eucalyptus oil or *Artemisia afra* ointment on the chest is helpful for all TB patients.

To clean the air in the house regular ventilation is essential and burning dried *Artemisia afra* and *Helichrysum* purifies the air. Pillow case inhalation with fresh *Eucalyptus* and wild mint will enable the patient to breathe the oils of the local medicinal herbs.

Some of the herbal teas that help to relax spastic bronchi, as we can find in TB, are wild mint, gentle *Eucalyptus* or pine leaves. Every two weeks exchange the teas with the others to provide variety.

Full body wash with *Artemisia afra* and *Helichrysum* water boosts the immune system and helps to heal better. Three times a week is sufficient. The patient ideally does the wash in the evening so that he can go to bed feeling warm.

### **Helpful exercises**

The **weak TB patient** should do exercises in the bed or while sitting on a chair. If necessary assist the patient to move better. Exercise as much as you can without exhausting the patient.

The **moderate recovered patient** can do the same exercises adding small walks around the house and if possible exercising outside, sitting on a chair. These exercise programs should take at least fifteen minutes. Repeat the program 2 more times a day.

**Patients with advanced recovery** should do the same exercises while standing and walking, playing with a ball and trotting on the spot or on the field. But they should exercise more intensely, ideally until they sweat.



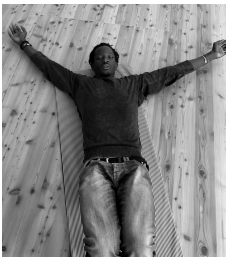
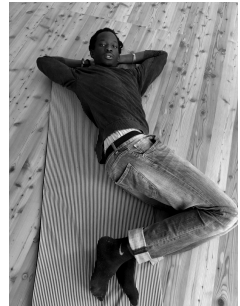
## Exercises in detail

**Lying on the back**, on the bed: take off the blanket to have enough space.



Start with hands on tummy practicing abdominal breathing. Lift both arms over the head while inhaling and bring back arms to tummy while exhaling.

Bend up legs alternately and then straighten. Bend the legs, put the feet together near the buttocks and swing both knees to the right and left.



Open your arm sideways, close and hug yourself, open again



Hold your hands to the ribs. Take a deep breath into the chest, so the patient can feel the ribs move outwards.

With the legs out straight, circle the feet inwards and outwards



Patient lies on their tummy with the legs straight, hands under the head and breathing gently towards the back.

### **For moderate and advanced patient**



Lie on the side in a half moon position. While lying on the right side stretch out the left (top) leg and the left arm above the head. Stay in this position breathing into the left side of the chest.

While still lying on the side, place the knees on top of each other and turn the left arm to the left making a spiral motion of the body, stay there for a while and breathe into your left chest and shoulder region let your body stretch. Repeat the same on the other side.



## Sitting exercises



Sit upright on a chair, let your body slump with the chin down, and then straighten back up again to be upright and looking forwards.



Shoulder rolling backwards while keeping posture upright, then roll the shoulders forwards.



Hug yourself then open your arms and back to the hug, turn left and right while hugging yourself.



Place your arm to the side of the chest and breathe deeply in and out.

Place the left hand on the side of chest, with an upward movement of the the right hand bend your body towards the left to make a half moon position, and alternate.



Bend over touching floor and stretch up opening arms widely, and back again.





Place one foot slightly forward , the other foot below the chair, with a gentle swing of both arms bring up over the head while standing up and breathing in, sit down again with taking hands down and exhaling.

### **Exercises in standing**

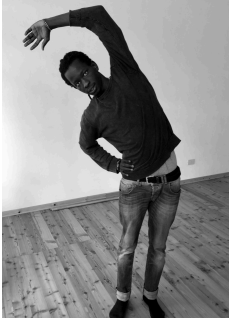


Bend over while exhaling, come up to an upright position, without over stretching, opening your arms to a wide position while filling your lungs, and back again.



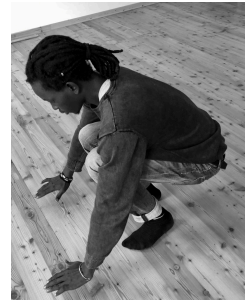
Spread your arms out sideways like airplane wings, turn to the right and back to the left.





One hand to the left hip, bring the other hand over your head, bend sideways to the left to stretch the chest, and then repeat this movement to the other side

Squat down until your hands touch the ground, and back up again. If this is difficult do only half squat with hands reaching to the knees.



Hold the chest with both hands and circle the pelvis, the chest shouldn't move, only the pelvis.



Do percussion on the chest, tummy and the legs, finish with the arms. This percussion can also be done in sitting position.



Jogging or trotting on the spot, breathing deeply in an out. Continue for as long as you can. In the beginning it might be only one minute. Later you can extend up to 10 minutes.

Power walking is beneficial for the advanced recovered patient. that means go for a tough walk, walking quickly without running, breathe deeply and stop before totally exhausted. Probably interval walking is a good way to start this exercise, one minute power walk two minute relaxed walk

### **Remember**

Some TB patients start to cough when they activate the body and when they start to exercise, in these cases don't hurry them, give them a rest in between

Some TB patients feel sharp chest pains and get frightened to do movements. In these cases reassure them that the exercises and movement don't do any harm. Continue doing the exercises gently, and the pain will subside. Teach them how to use Artemisia afra, Lengana ointment.

Some TB patients get tired easily while exercising and tend to avoid them. Do interval training so that they can recover in between exercises.

Some TB patients still have productive cough, give them time to expel sputum and clear their airways.

All TB patients should perform breathing exercises

A wonderful medicine for the lungs and the soul is singing.

**All three groups** should practice regular deep breathing exercises, clear the lungs with self percussion, exhale cough practice and use the straw for exhaling exercises.

**Advice for the patient**

It is very important to keep warm, eat warm and drink hot tea. Avoid sitting in cold wind.

The old secret of warm feet and legs, which keeps the lungs warm is beneficial to all respiratory problems.

Always wear dry clothes, and change after sweating. As we all know, in the case of TB, the proper hygienic rules are essential for the patient and their family members.

Take care to have good quality sleep.

# ABC on stroke

## What is a stroke?

A stroke is a bursting or blockage of a blood vessel in the brain. When this happens, blood doesn't travel to all parts of the brain, so these parts can be damaged or die.

Stroke occurs more likely if patients:

- Smoke,
- Are overweight,
- Have high blood pressure (hypertension),
- Drink too much alcohol,
- Have heart problems,
- Have diabetes,
- Have someone in the family who has had a stroke.
- Have kidney problems

But remember, **Stroke is not contagious!**

## Will they get better after having a stroke?

Every stroke is different, most people get a lot better, some people take longer, some people may not recover

Most of the stroke patients are referred to the local hospital and come back to the village after a few weeks.

## After a stroke

The leg and arm may be weak or not move at all, there might be no feeling in the leg or arm, Patients may ignore or bump into things.

Give the patients help with: getting in or out of bed, sitting in a chair, walking, getting dressed, eating and drinking, washing themselves, going to the toilet. Also show family members how they can help the patient.

Please note: do NOT pull on the weak arm as this can cause damage to the shoulder and can become very painful.

## Starting exercises EARLY after a stroke is good

Patients are more likely to get strong in the first few months after a stroke, this is when they need to work hard, show them the right exercises to do. Lots of practice is the way to go. Teach patients how to move their arm and/or leg in a proper way without getting hurt. Encourage them to do as much

as possible by themselves, and then assist them where they are unable to do the movement.

Shoulders can get sore, they need to be supported. Patients should use their arm. Exercise may help to get the arm stronger. Give them a sling if they need it or support the arm on a pillow when they are sitting or lying down.

### **Exercises for patients with severe stroke**

You will very often find these patients in the bed, they are not mobile, and maybe they are not capable of moving their arms or legs by themselves. Practice rolling exercise with the whole body, rolling from one side to the other.

Also do a lot of active exercises for the healthy arm and leg.

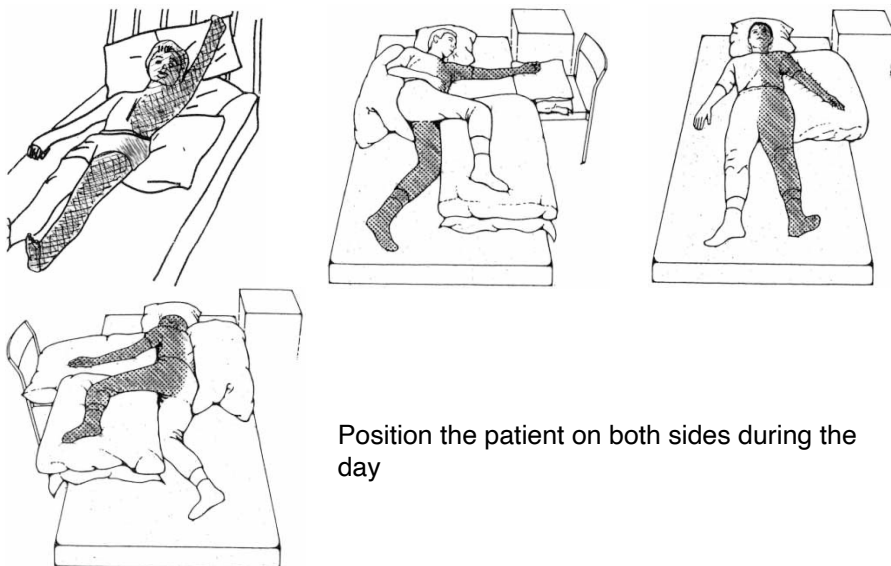


Help them to bring the paralysed arm above the head, to bend the elbow and extend the arm.

Close the fingers to a praying position, turn the fingers outwards and stretch the arm.



Help them to move the leg with assisted exercises. Bend both knees and help the patient to lift up the pelvis by pushing down on the feet.



Position the patient on both sides during the day

Mobilise the patient to a sitting position, whenever possible, during the day, on a safe chair. If the patient is able to stand, practice standing and do body weight distribution exercise. Support them to shift their weight from side to side – when the weight is on the weak leg, encourage them to keep that knee strong and as straight as possible.

### **Exercise for patients with moderate stroke**

Do the same as written above for patients with severe stroke.  
Add lying on the tummy.

Let them do as much as possible by themselves.

They should practice many times a day, coming from lying to sitting going to standing.

Help them with what they need to be safe.

Do assisted walking training.

Exercise while sitting on a chair.

Remember to also exercise the healthy side, as it is important for the development of the paralysed side and for overall improvement in function. When the patient starts to walk by himself, take all precautions to prevent a fall. They may need a stick to lean on, or someone by their side at first. Stand on their weak side when you are walking with them.

Every daily activity becomes exercise: washing themselves, dressing, eating, going to the toilet, moving outside to get some sun and also social contact.

When it becomes possible, start exercise lying on the floor, going down to the floor and coming up is already exercise.

It is always wise to practice activities the patients needs at home such as getting out of bed, walking outside, feeding themselves etc.

Remember the three rules of engaging with patients:

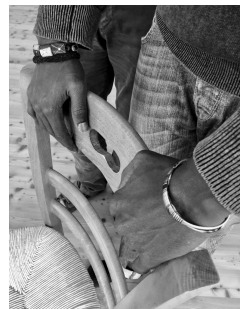
1. Let them move by themselves as much as is possible and safe
2. Assist the patient where they have difficulties
3. Do for the patient what they cannot do by themselves

Whenever you can, give positive and sincere feedback to the patient, it is motivating for him/her.

## Equipment can help

- Over toilet frame: To get on and off the toilet
- Foot splint: To help with standing and walking, get advice from the physiotherapy department of your local hospital
- Wheelchair: To help when they can't walk far, to bring the patient outside to the sun and to social contact. When there is no wheelchair, use the two chair or bench to bench technique

- Assisted walking with the help of a chair in front of him, using it like a walking frame



- Spoon or fork with a thick handle to help them hold it in a weak hand, and feed themselves
- A heavy table next to the bed to lean on and to help them get out of bed
- A firm, higher chair to make it easier to stand up
- A sling for a paralysed arm, if the shoulder is painful

Give the patient, if possible, the right material to help him in his daily life

### **Why are patients having difficulty eating and drinking?**

Sometimes food can go into the lungs instead of the tummy.

Show them how to eat food and drink safely.

Tell them to always sit up before they eat or drink.

Other things you can show them: take small mouthfuls, eat mushy food, some patients need a feeding tube.

Tell them to call for help if they cough when they eat.

### **Going to the toilet**

- Some patients have problems going to the toilet.
- Tell them to go to the toilet regularly every few hours
- Infections in the urinary tract are common after stroke, drinking lots of water helps
- Tell patients to ask for help going to the toilet, if they have problems

### **Speak - Understand - Communicate**

Family and friends can help too, ask them to:

- talk in short sentences,
- use body language,
- use writing or pictures,
- be clear,
- talk slowly.

Be calm, don't shout at the patients, don't lose your temper when you get impatient.

After a stroke patients may: forget some things or how to do things easily, have problems concentrating, get tired quickly. Some patients may get emotional and easily upset, or depressed.

### **Medicines**

Medicines must be taken at the right time and the correct dose every time.

It is very important to check with the doctor before stopping a medicine, and have regular checkups in the health centre



**What patients can do by themselves to reduce the risk of stroke:**

Walk daily, play sport, do garden work exercise daily

Stop smoking,

Stay off alcohol

Eat more vegetables, less carbohydrates and reduce sugar

**Family and friends can help**

Family and friends are important and can help, and can learn a lot from you, show them.

Encourage the patient's relatives or friends to do as much as he or she can.

# Swollen leg, oedema

## Why do you get a swollen leg

There are many reasons:

- After contusion or injury to the leg
- Due to circulation problems of the veins or lymphatic system,
- Infections
- Heart and kidney disease
- Due to medicines, particularly for HIV and TB
- Diabetes
- and more

A patient with a swollen leg should always be checked by the nurse or doctor to establish the origin of the oedema and prescribe the appropriate treatment.

Oedema is usually temporary, but can sometimes become chronic.

## Remember

Oedema patients should take care not to injure or scratch their swollen leg during everyday activity, like: working in the fields, working in the mountains and so on.

They should always cover their legs to protect the skin. A simple scratch can become infected and develop a huge problem for the patient. Therefore certain traditional practices like signing the body with small cuts are to be avoided.

Be careful when cutting your toe nails that you don't hurt yourself. Elderly patients who bend only with difficulties, shall ask for help. Whenever you see an oedema patient with an acute infection, encourage them to see the doctor immediately.

## What the patient can do by himself

Every day the patient should:

- Walk.
- Rest the legs by lying on the floor with legs elevated on a chair.



- Self massage and exercise. See below.
- If the oedema doesn't recover during the night, bandaging should be applied. Start at the toes, and apply the bandage around the leg, moving upwards

## Exercises and self massage

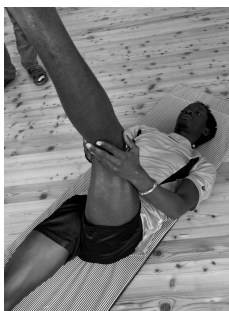


The patient lies on the floor, with the legs elevated up on a chair and breathes deeply in to the abdomen.

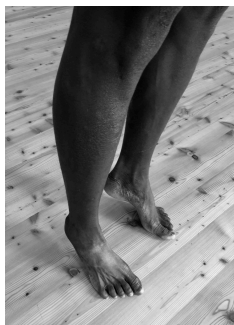
Patient lifts legs alternating the left and the right leg,



then circles feet outwards and inwards, then bends the foot to dorsi- and plantarflexion



Still lying on the back lift a leg and then stroke the whole leg gently from the foot to hips, passing behind the knee. Press the leg firmly with both hands then massage the other leg.



Stand up and pump the large calf muscles by standing, then rise up on your feet till you stand on your toes and back down again, when you are up stay there for a few seconds, while doing this exercise practice abdominal breathing. Walking is always beneficial to prevent and improve oedema.

### **Treatment with natural remedies**

Well cooked vegetable soup, especially with onions and/or stinging nettles, Bobatsi, help to drain out liquid from the tissue.

Add more fennel, Polisa, tomatoes and carrots and specially more onions to your meals, which all have diuretic effect.

Drink tea made from fennel, Polisa, stinging nettle, Bobatsi.

Patient with chronic lymph oedema should avoid high protein diet.

For all oedema patients it is recommended to reduce salt consumption.

### **Advice for the patient**

Take care not to scratch or injure your legs - protect yourself in rough terrain.

Keep the skin moist using moisture cream, gently applied to the skin.

Avoid sunburn on your swollen legs.

Avoid prolonged sitting or standing.

Twice a day elevate your legs.

Put a pillow under the bed mattress so that your legs are higher during your sleep.

Wash your legs with cold water to refresh them on hot days.

If the oedema doesn't reduce over night, use bandages. Your village health worker or the nurse will show you how to apply them.

Practice your exercises every day and don't stop when you get better.

## **Helping the chronic bedrest patient**

Some patients are not able to leave the bed for some weeks, other never at all. Their medical condition doesn't allow them to be mobile. Such patients need our help.

### **Remember**

Even if a patient does not have any positive outlook to get out of the bed, with our care a treatments we give him a better quality of life, that means dignity.

Whenever we can ease suffering it shall be done. compassion is the driving force, not success.

What we can do is little, but for a suffering patient it means a lot. Sometimes you won't see the results of your work immediately, but definitely after a few weeks. Well cared for patients suffer less, feel more human and respected and can face their situation with more courage.

Helping a weak, vulnerable human being makes yourself more human.

### **How can physio skills help in the care of a bedrest patient**

5 physio skills offer help: moving, positioning, massaging, helping to breath and mobilising the patient. With these activities we help to avoid bedsores, circulation problems, cough and pneumonia, contractions and deformations, constipation, muscle weakness and depressive state of mood. Our regular visits to bedrest patients helps to ease loneliness.

### **Exercises**

Move legs and arms in every joint, in all directions. Wherever the patient can move by himself, let him do, where the patient moves with difficulties, assist and help. where the patient cannot move, do it for him.

Start with the foot, then on to the knees and the hip, then the other leg. Same with the arms, start with moving the fingers and wrist, then the elbows and shoulder, always do both sides.

## **Positioning**

Bed rest patients should be turned from one side to the other regularly and daily. Prolonged lying on the same side, the patient can easily get bedsores. Take care that the patient is comfortable, use pillows and towels. Four times during the day and twice at night is the minimum for positioning a bedrest patient. Ask and look if the patient is comfortable.

While positioning the patient you always have a possibility to have a small chat, you bring the outside world into the room. Whenever possible put the patient into a chair, ideally near to a window in the main room of the house, where he can meet people, or even outside where there is no wind and not too much sun.

## **Respiratory treatment**

As the patient doesn't move much we shall help with deep breathing exercises, chest percussion and good cough techniques. To keep the lungs clear and free of sputum, offer the patient a straw to practice exhale breathing, which opens up the lungs.

By steaming the house with Eucalyptus or wild mint you can refresh the air and help to open the bronchi.

if you decide to use chest percussion in side lying do one side first, then let the patient stay for 10 minutes in this position, then turn the patient to the other side and do your percussion treatment on that side. Like this, sputum moves better to the main bronchi and can be expelled from the respiratory system by coughing.

## **General advice**

Be careful to adapt the intensity of your treatment to the condition of the patient. In very weak cases a short and gentle treatment is likely to be more helpful. With slow, reactive patients, move slowly and take your time. Keep an eye on not hurrying.

Tense patients need a relaxing atmosphere, try to help them calm down. Sometimes patients are, for some reason or other, not very cooperative, be patient but do what you have to do. Where it is impossible, don't force.

with big, obese patients do the work being two of you. This is a general rule, never be alone when the situation is really challenging. It is always good to involve family members and show them how they can help the patient by themselves.

Always practice the standards of good hygiene, whatever you do.

## How to run exercise classes in the village



Many people enjoy participating in exercise classes. They make more fun and it is easier to do them together, a group is always empowering. Therefore it is wonderful to organise an exercise class in the community.

Give your class a happy name, for example “let us move” for elderlies, „fit and fun” for the younger ones, “dance

and stretch“ for the livelier, „relax and enjoy“ for the stressed people.

Look for a place where you can exercise regularly: the community hall, the school ground or the mission. A nice place in the shadow of a big tree is also useful for exercising

### 10 Golden Rules for the successful teaching of exercises

1. Organise the group actively, engage the class in organising the exercise space, involve all members of the class
2. Unite the group with a song, some social game or a health talk
3. Lead from the beginning to the end
4. If you encounter a problem in the group - deal with it.  
Remember that you are the group leader
5. Teach exercises verbally and demonstrate the exercises
6. Mix difficult exercises with simple ones
7. Teach exercises creatively by using songs, clapping hands, counting and using all colours of your voice
8. Interact with the group and integrate spontaneous contributions, where productive
9. Give positive and sincere feedback, whenever possible
10. As you started, close the exercise class with a song

Set your date and time for the exercise regularly, that way is always helpful to create a stable group. 45 Minutes up to 1 hour is enough, for elderly maybe half an hour is better. Observe the skills of your participants, adapt your exercises to them and with this avoid accidents.

### Enjoy your group

# 7. Appendix

## Physio herbs - names and dosages for adults

### **Artemisia afra, Lengana, wild wormwood**

**Tea:** put a levelled teaspoon of dried powder together with 1 teaspoon of fatty milk powder in a cup with boiling water. Three times daily, maximum for two weeks.

**Steam inhalation:** A tablespoon of dried powder in 1 litre of boiling water, inhale steam in acute cases two times a day. subacute cases once a day, chronic cases 3 times a week.

**Full body wash:** a handful of dried powder or fresh *Artemisia afra* leaves in 1 litre of boiling water, once a day. Don't dry yourself with a towel after the body wash.

**Household steaming:** 1 handful of powder in 1 litre of water, let the open pot slightly boil until there is no smell, takes about one hour.

**Fumigating (smoke):** Put a pinch of powder onto a burning charcoal, or throw into a fire, add more when smoke/smell is gone.

### **Mentha longifolia, Koena, wild mint**

**Tea:** three finger pinch of dried herbs, in a cup with boiling water. 3 times daily, stop after 3 weeks

**Steam inhalation:** 3 three finger pinches of dried herbs in 1 litre of boiling water, inhale steam in acute cases two times a day. subacute: once a day, chronic 3 times a week.

**household steaming:** 2 three finger pinches in 1 litre of water, let the open pot slightly boil until there is no smell, about one hour.

**Pillow inhalation:** put a few fresh branches in your pillow case, change them when they are no longer smelling

### **Polisa, wild fennel, foeniculum**

**Tea:** levelled teaspoon of dried seeds, in a cup with boiling water. 3 times daily, maximum 2 weeks, you can also use a three finger pinch of fresh leaves.

**Chew** on a piece of fresh stem to ease stomach problems.



### **Bleikom, Eucalyptus tree, Eucalyptus globulus**

**Tea:** three finger pinch of dried, chopped leaves, in a cup with boiling water. 3 times daily, stop after 3 weeks

**Steam inhalation:** 1 tablespoon of dried, chopped herbs in 1 litre of boiling water, inhale steam in acute cases two times a day.

subacute: once a day, chronic: 3 times a week.

**Household steaming:** 1 handful of dried, chopped leaves in 1 litre of water, let the open pot slightly boil until there is no smell anymore, about one hour.

**Pillow inhalation:** put a bunch of fresh leaves in your pillow case, change them when they are no longer smelling

### **Phefo, strawflower, Helichrysum odoratum (montanum)**

**Tea:** 1 two finger pinch of dried herbal powder and 1 teaspoon fatty milk powder, put in a cup with boiling water. In acute cases once or twice daily, in subacute cases once daily for a maximum period of 2 weeks, in chronic cases 3 times a week for 2 months

**Full body wash:** 2 three finger pinches of dried herbal powder in 1 litre of boiling water, once a day without drying yourself with a towel after washing. It can easily be also mixed with Artemisia afra powder

**Household steaming:** 2 three finger pinches of dried herbal powder in 1 litre of water, let the open pot slightly boil until there is no smell, about one hour.

**Fumigating (smoke):** Put a pinch of powder onto a burning charcoal, or throw into a fire, add more when smoke/smell is gone, it can be easily mixed with the same amount of Artemisia afra

**Pocket inhalation:** put a handful of fresh or dried leaves in to a little bag, use it every hour as a sniffing bag. which you can use for several weeks

## **How to produce medicinal oils**

Working with Physio skills in home based care, we can benefit a lot from the knowledge of natural medicine. Wherever you work, medicinal oils and ointments are helpful for everyday use. It's not difficult to produce them.

## **Formula: PLANT + OIL + HEAT = MEDICINAL OIL**

First prepare a water bath (double boiler): Put a pot one quarter filled with water on the stove. Another slightly smaller pot is placed in this pot. The ingredients are heated in this smaller pot. The water bath guarantees that the temperature never rises above 100° C. Be sure that no water can go into the smaller pot even when it should boil – if the oil in the inner pot is contaminated with water, the oil goes rancid much more quickly.

The leaves also must be absolutely dry, so that no water enters your oil from the leaves. Use the best locally available vegetable oil: palm oil, palm kernel oil, shea butter, sunflower oil, peanut oil, or any other vegetable oil that is kind to the skin.

Put the mixture into the water-bath and let the water simmer for 60 minutes, stirring every 5 minutes. The oil should never bubble. Filter and leave to cool without stirring. This medicinal oil needs protection from sun, heat and air. Therefore store your oils and ointments in tightly closed containers. Fill them almost up to the top to minimise the amount of air. Never mix old products with new ones! When oils smell rancid don't use them for this purpose anymore.

Do not let yourself be attracted by commercial products because of their colour or perfume. Colourings and preservatives can cause allergies. Your home-made oils and ointments are certainly better for your health!

The ingredients for these recipes are given in volumetric units (like mug, tin, cup, glass). The amounts for plants refers always to the dried, pulverised or chopped state.

### **Baby oil**

- 1 cup powdered leaves from lemon tree - 9 cups vegetable oil

### **Beauty oil**

- 1 cup powdered leaves from lemon tree or from orange tree - 10 cups vegetable oil

### **Massage Oil**

- 2 cups of dried, chopped Eucalyptus leaves - 10 cups vegetable oil

### **Oil for rheumatism**

- 1 cup Peri peri, dried and pounded - 1 cup pine resin (if available) - 4 cups vegetable oil

### **Artemisia afra, Lengana oil**

- 1 cup Artemisia afra, powdered leaves, 2 cups of vegetable oil

Buy fresh oil, the expiry date of the medicinal oil is the same as the carrier oil!

Avoid contact with the eyes! For small children use only baby oil.

All these medicinal oils can be used directly on the skin or processed further to ointments, as follows.

## **How to produce medicinal ointments**

**Formula: MEDICINAL OIL + BEESWAX + HEAT = MEDICINAL OINTMENT**

Melt about 1 cup of chopped beeswax (if not available take white candle wax) in 6 cups of medicinal oil in a pot sitting in a pot with water, (double boiler), so that the oil doesn't get too hot.

Test the consistency of the ointment by putting a few drops on a plate. If too thick add some medicinal oil, if too thin add some more beeswax. In summertime add more beeswax, in wintertime less.

Pour the warm and liquid ointment into containers or jars, let them cool down before closing and labelling. Store these containers in a cool and dark place. Expiry date is that of the medicinal oil

## **Where can i get help for my daily work**

- The nurse or doctor of your health centre
- Your local hospital physiotherapy teacher:

For Lesotho:

- Seboche, St. Charles hospital
- Thaba Tseka, Paray hospital
- Roma, St. Joseph hospital
- Tebellong hospital

- Your local primary health care, PHC coordinator or The TB coordinator

For further information and tutorials go to the reference database:

[www.physioinlesotho.ch](http://www.physioinlesotho.ch)