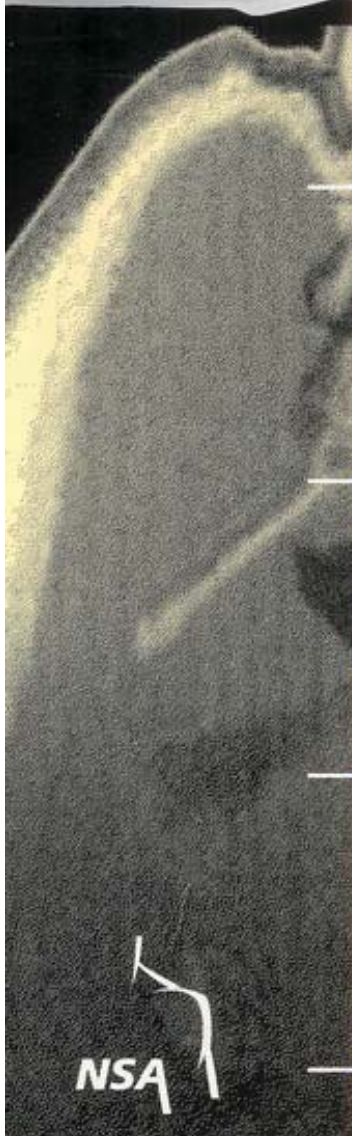




# Primary frozen shoulder Frequent asked questions

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This brochure is part of a CD called "The primary frozen shoulder".  
Information about this CD you can find on page:  
<http://www.nsastenvers.nl/primairefrozenshoulder.html>

Frequently asked questions concerning the frozen shoulder may be divided into patients' questions and practitioners' questions.

### Patients' questions about the disease

#### What is a frozen shoulder?

Frozen shoulder is a term for 'stiff shoulder'. It is a slowly progressive illness of the shoulder with decreased mobility of the shoulder in every direction. In addition to the restricted movements there is often pain. This may vary from person to person. One person may have much pain at rest, while another person will suffer less. At the climax of the illness the shoulder movements are so restricted that it isn't possible to raise the arm forwards higher than 90 degrees (Fig. A and B), sideways till 45 (Fig. C) degrees and rotation of the arm is hardly possible (Fig. D and E).

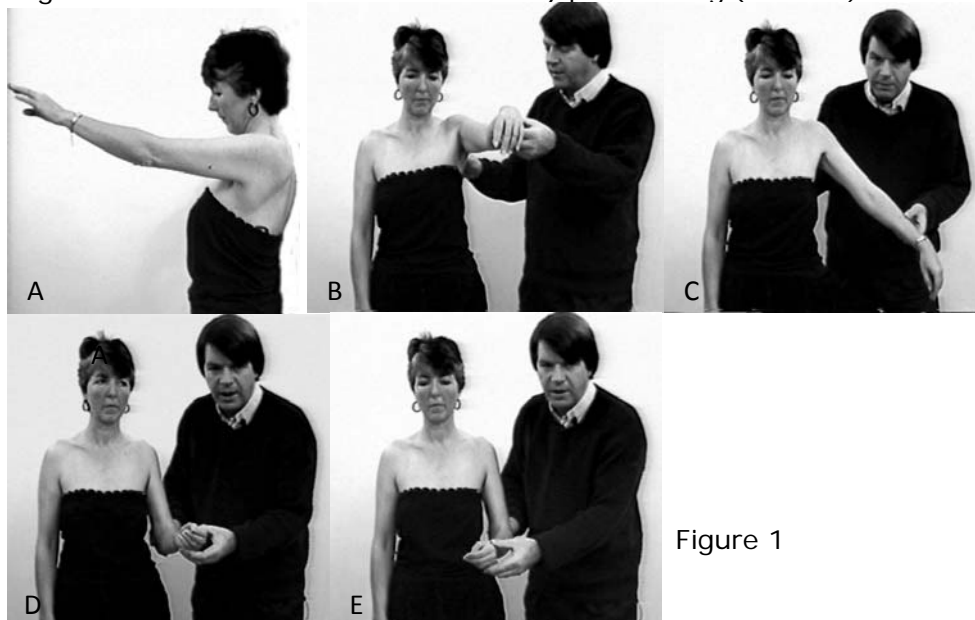


Figure 1

Almost everyone will suffer from pain when moving, especially in the end positions. Unexpected sudden movements are very painful, though the pain will usually disappear within some minutes. Most people suffer greatly at night, their sleep being badly disturbed.

There are two forms of the disease, namely a *primary frozen shoulder* and a *secondary frozen shoulder*.

A primary frozen shoulder is a slowly progressing disease without a distinct cause, whereas a secondary frozen shoulder has a well-known cause.

#### What is the cause of a secondary frozen shoulder?

A secondary frozen shoulder is associated with diseases known to result in restrictions of shoulder movement. Some examples are: fractures of the head of the shoulder, dislocations of the shoulder, certain diseases of the lung, diabetes mellitus, and diseases of the thyroid gland. Very often a frozen shoulder develops after a shoulder operation, both after operations creating 'space' within the shoulder and after operations aimed at restoring stability. We do not know why the shoulder reacts that way.

It's not that the disease develops because some mistake has been made.



## The primary frozen shoulder

### **Why do you distinguish between a primary and a secondary frozen shoulder?**

The cause of the primary frozen shoulder may be unidentified; however, the consequences, the course of the disease and the way of recovery are well-known. In a secondary frozen shoulder recovery is much more difficult to predict. Depending on the cause recovery may even fail to occur.

### **How often does a frozen shoulder occur?**

In a hundred shoulder patients, one or two will develop a primary frozen shoulder. Since a secondary frozen shoulder can have so many differing causes, the total number of frozen shoulder patients is much higher.

### **My brother had it, too; is it hereditary perhaps?**

No, that must have been a matter of pure coincidence. Heredity plays no part in the frozen shoulder.

### **Is there a connection with my Dupuytren's disease?**

This disease takes place in the palm of the hand; the tendons of the finger knuckle benders grow thicker and shorter over the years. Now and then a relation has been suggested with the frozen shoulder, because the tissue in Dupuytren's disease shows some resemblance to the tissue affected in a frozen shoulder. For all that the combination of a primary frozen shoulder and Dupuytren's disease is purely coincidental.

### **My specialist said it happens more often in diabetes; is that true?**

Yes. In diabetics a frozen shoulder is seen quite regularly. It's a disease of long standing, and it is difficult to control these patients. However, a person with a frozen shoulder need not bother being checked for diabetes. In patients with a diabetic frozen shoulder the skin often feels somewhat pasty, and the tissue is also less flexible. These shoulders are being treated all right, and there is some effect, too, but recovery of mobility will take longer than normal.

### **How quickly does a primary frozen shoulder develop?**

Slowly. It may take half a year till the shoulder gets really stiff. In the beginning phase patients will describe feeling as if they have caught a 'cold' in their upper arm. It does not feel threatening, and people think it may very well blow over again.

Next, unexpected movements will get very painful, and people will only consult their family doctor when problems arise at night. A stiff shoulder developing within some days or a week is not a frozen shoulder by any means. In that case one should consider an acute inflammation of a bursa or joint instead.

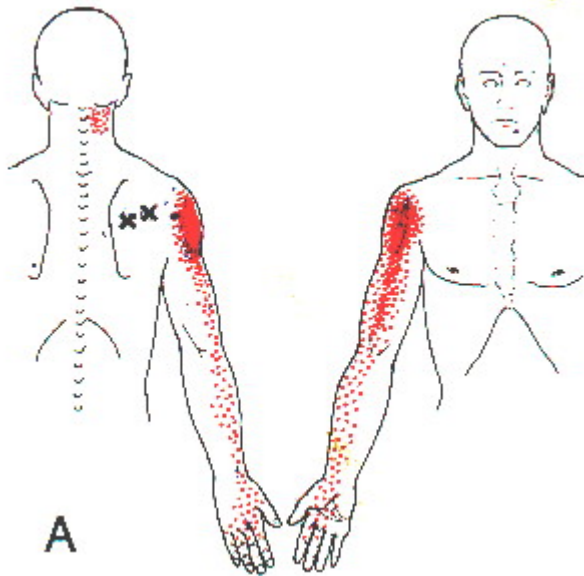
### **So it isn't the same as a bursitis?**

No, it is not the same as a bursitis, though the bursa is also affected. The difference is this: in a bursitis it is just the bursa that is swollen, whereas in a frozen shoulder a variety of tissues are affected. Also in a bursitis the so-called adhesions are much less conspicuous.

**Can't it be a swelling of the nerves?** There is often an idea of nervous injury because pain in a frozen shoulder may radiate into the whole arm. This idea is wrong, though. There is not a single indication of nerves being affected. Muscles and joints may also cause radiating pain. The pain in the mid upper arm, for instance, is probably caused in the shoulder itself. This pain will also evaporate after an anesthetic has been injected into the joint. The muscles about the shoulder may well radiate into the front side of the upper arm and forearm, and even into the hand. These painful muscle spots are also called myofascial trigger points or just trigger points. The physiotherapist will also often treat these trigger points. This may have a positive effect on the pain. It will not, however, restore the joint mobility.



## The primary frozen shoulder



*Myofascial trigger points in muscles on the shoulder blade may cause radiating pain in the area marked with red.*

### **Is anything known about psychic factors associated with a frozen shoulder?**

There are no psychic illnesses known to be associated with a frozen shoulder. However, there are factors of psychic stress that appear to play a part. The frozen shoulder will then develop some time after the stress has in fact already disappeared. Conversation therapy is not known to positively affect pain or recovery of shoulder mobility. This opinion has been fostered by our therapeutic experience. We have also observed that new periods of psychic stress will not cause aggravation of the existing picture.

### **Is there a relation between RSI (repetitive strain injury) and the development of a frozen shoulder?**

No, there is no such relation. We have looked at the jobs of frozen shoulder patients and could not find a relation between occupations stressing the shoulder and the development of a frozen shoulder.

### **Limitations and discomfort**

#### **What are the consequences for moving in daily life or for my job?**

During the stiff period of the disease the arm cannot be used very well for some time. It is difficult reaching backward with your hand, like when you are cleansing your back, or undoing the bra. During daily care activities such as shampooing your hair, cleansing your back, undoing the bra, et cetera, are often affected for a long time. Actually, however, no limitations are reported after recovery of function.

#### **As far as occupations are concerned:**

During our own follow-up it appeared that dropout because of disability turned out better than expected, depending on the sort of occupation. A job stressing the shoulder, especially work above one's head, and work requiring unexpected movements will not be possible for some time.

#### **I have much pain at night; is there a position in which I can sleep without pain?**

Pain at night do occur frequently in a frozen shoulder. When sleeping in bed the arm will always more or less be positioned in a forward direction, never mind whether you are lying on the affected or the unaffected shoulder. Because the shoulder joint is so much restricted the shoulder blade and the collarbone are also in an abnormal position. This position cannot be maintained for a long time. You will have to change position every so often, which is also painful in itself. A corticosteroid injection is most effective to alleviate night pains.



## The primary frozen shoulder

### **For how long will it trouble me?**

The primary frozen shoulder is a disease of long standing. With the treatment as studied and developed by us, it will last eight months on the average. Roughly estimated 60% of primary frozen shoulders will last some eight months, 20% will recover more rapidly, and 20% will take longer.

People often say that it wears off of its own accord. The latest publication on the topic maintains that after two years it wears off of itself, but there are also studies reporting of a poor recovery after six years. In our opinion treatment firstly is necessary, and secondly it cuts time to recovery down to a reasonable period.

### **Will I get completely better, or is there always some restriction left?**

Our study shows that after treatment there is hardly any left/right difference. In some patients turning the arm outward was still slightly restricted, though this carried no consequences for their daily movements.

## **Treatment**

### **Can something be done about a frozen shoulder?**

Yes, something can certainly be done about it. Both about the pain and the restriction of movement. The main treatment consists of physiotherapy.

In some cases, when pain at rest and night pains play an important part, it is wise to start with a corticosteroid injection. This is preferably done in an x-ray department.

### **What is the effect of corticosteroid injections in the joint?**

They affect the swelling reaction of the covering of the joint's capsule. This has been shown to be very effective for pain at rest and night pains; not at all or much less so for the restriction in movements.

### **Possible downsides to corticosteroids**

The administration of corticosteroids may indeed have negative effects. On one hand, the suppression of the auto-immune system may cause a reduction in the defense mechanism.

In practice, this may result in complications like bacterial infections in the shoulder. Alien materials such as screws inserted during an operation may cause problems.

On the other hand, the corticosteroids may have an adverse effect on the quality of the tendon tissue. In the case of the shoulder this mostly concerns the biceps tendon. In a very limited number of cases we have monitored a rupture of the tendon of the biceps shortly after the patient had been administered corticosteroids.

The axiom in these cases is to establish a well-founded diagnosis prior to subscribing drugs such as corticosteroids. "if it doesn't do you any good, it won't harm you either", is *not* the credo to be applied with this type of medication. Excessive use must be avoided. This is our reason for administering the corticosteroids using either ultrasound or, in the case of the frozen shoulder syndrome, x-ray in combination with a contrast. It is our personal opinion that letting a chronic inflammation endure causes more damage than a limited administration of corticosteroids.

### **Why must the injections be given in an x-ray department?**

In a frozen shoulder the medicine must be injected right into the joint. When an injection is given under x-ray control, which implies that the radiologist can see where s/he is injecting, some contrast is used to ascertain whether the medicine does arrive at the right spot. Because of this accurate approach a single injection will often suffice.



## The primary frozen shoulder

### **Are medicines opposing the swelling any good?**

No medicine has been described in the literature that will solve the frozen shoulder problem. The effect of common antismelling agents is also rather small. In fact a positive effect has only been reported of corticosteroids injected into the joint.

### **Should I have done more exercising when my shoulder stiffened?**

No, as soon as a frozen shoulder gets restricted it can no longer be prevented. The disease will progress until the shoulder gets completely stuck fast.

### **Can I do something about it myself?**

No, there is nothing you can do yourself. You may move the shoulder as contained by its own limits of mobility and by your pain threshold. You should not aim at restoring the mobility of the shoulder. This may sound funny, but it can be explained as follows:

In a frozen shoulder, when you move your arm, it is actually not a movement of the shoulder joint but of the shoulder blade and the collar bone. In fact it is quite an abnormal movement for the shoulder, a very demanding job for the joints between collar bone, shoulder blade and breast bone.

If you are exercising for yourself you will only loosen these joints and not the shoulder joint, which would be the actual objective.

### **Shouldn't I do exercises at home then to loosen the shoulder?**

No, it would not be sensible to do this. It would mostly just hurt.

### **Is it allowed to swing a little with my arm?**

Some swinging is allowed, as is moving within your pain threshold, if you do it without force.

### **How about the recovery of mobility in a primary frozen shoulder?**

The recovery of mobility takes place in quite a fixed sequence. First the mobility at the back side of the capsule of the joint will improve, followed by the forward movement of the arm, then turning the arm inside and sideways, and finally moving the arm outside. Even if the shoulder joint is stuck fast completely, the arm may still be moved 90° forward.

Speaking for myself I would have expected when forward mobility was increased by 10° that you would be able to move the arm forward to 100° and so on. This is, however, not the case.

### **Why does it take so long before I notice a recovery of mobility?**

It is a fact that it takes a considerable amount of time before the patients notices the recovery of the mobility. Of course, this does not mean that the mobility of the shoulder joint is not recovering. As long as the shoulder still needs - and therefore uses - the compensation mechanism, it will not be possible to elevate the arm over 90 degrees. The mobility of the shoulder joint has to recover almost entirely in order to render the compensation mechanism unnecessary and for the arm to be raised over 90 degrees.

### **What is mobilization under anesthesia?**

Here the arm will be moved passively under general anesthesia, so as to loosen the shoulder joint. The results of this procedure do vary. Some experts are enthusiastic, others are not. The capsule is as it were torn loose, which subsequently is often very painful. There has been some research reporting that after some time the capsule gets stuck fast again, forming a scar.

### **I know of a person who was well within a week after treatment.**

That person may have had pain or a restricted shoulder, but certainly not a frozen shoulder. There has never been a frozen shoulder that was healed within a week or a month. Not even by a medical wizard.

by: J.D. Stenvers , PhD, PT 2009



## The primary frozen shoulder

**I have had an accident with my shoulder, and they say I got it because I didn't exercise enough.**

A frozen shoulder comes into existence or it doesn't. You can't influence it by exercises. For instance, a shoulder that has been held against your body for a long time due to pain may become stiff indeed; however, this does not result in all the tissues getting stuck fast.

**Will it remain a weak spot? Will it return?**

No, in course of time you will not notice it anymore. Still, it may take a long time till the tissue is completely flexible again and you won't notice a left/right difference, even if your mobility is totally normal again and there is no pain at all.



## The primary frozen shoulder

### Practitioners' questions

#### General questions

##### **Isn't the frozen shoulder a self-limiting disease?**

The primary frozen shoulder is indeed known as a self-limiting disease. There are several phases to it, as described elsewhere on this CD-ROM. The last phase is termed the chronic-adhesive phase. The inflammatory reaction is extinguished, the pains at rest have been mostly dissolved; however, the adhesions are still there in plenty. There is a study reporting recovery after two years; there is also a study in which 65% of the patients still had serious pain and profound loss of function after six years.

##### **In my opinion it is a self-limiting disease but not a self-healing disease.**

***Author's opinion: Start treatment.***

##### **Is there some advice on the sequence of treatment?**

Yes. It is time for action as soon as, after a long period of upper arm pain, mobility diminishes within a short time.

In case of much pain at rest and night pains an intra-articular corticosteroid injection is the treatment of choice. Physiotherapy may be started after a week or ten days.

##### **Does it make much difference whether the injection is given intra-articularly or peri-articularly?**

Yes indeed. A peri-articular corticosteroid injection will have no effect whatsoever in a frozen shoulder. Many patients will tell you that their practitioner's first thinking was of a bursitis, and that they had an injection in accordance with standard protocol. On second thought, when complaints did not disappear, it would be a tendinitis, and they were injected into the tendon. When this also was of no avail, the shoulder really got stuck fast, and it happened to be a capsulitis.

##### **Why not exercise in the pain-free zone?**

There is a difference between *moving* and *exercising* within the limits of the pain threshold: movement is necessary for the patients day-to-day functioning; exercise is aimed at recovering mobility.

The shoulder joint functions as part of a motion chain of various joints and bones.

The regular functioning of this chain depends on the resistance in each of the joints in the chain during motion.

As long as the glenohumeral capsule is stiff and shortened, the resistance in the glenohumeral joint will be higher than normal; the scapula and the clavicle will react with a compensation mechanism enabled by the sternoclavicular and the acromioclavicular joint.

Rotational forces have an important role in this process and their influence is magnified by forceful and repetitive exercises. Roentgen cinematographic research we have performed has shown that forced movement of the shoulder has resulted in hypermobility of, above all, the acromioclavicular joint.

It has also shown that the resulting hypermobility does not normalize after the recovery of the glenohumeral mobility.

Therefore, active exercise of the shoulder starts making sense only after the resistance in the glenohumeral joint has normalized and the compensation mechanism is no longer put into effect.

Moving the shoulder should be understood as moving in forward flexion and abduction. In the case of the frozen shoulder syndrome, rotation of the arm is mostly a movement of the acromioclavicular joint. Exercising rotations with a Thera-band for example, will thus have a mobilizing effect on the acromioclavicular joint, more so than on the glenohumeral joint.

Please refer to the section "rotations" in the chapter "movement mechanisms" for an elaboration on the subject.

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## The primary frozen shoulder

### **If the frozen shoulder is a glenohumeral problem, why then is it also necessary to recover the scapulothoracal mobility?**

For reasons that are as of yet unknown the development of the frozen shoulder syndrome does not only manifest itself in an impairment of the glenohumeral movement but also in an impairment of the scapulothoracal mobility.

It is much easier to monitor the impairment of the scapulothoracal mobility using roentgen cinematography than clinical examination.

If the scapulothoracal mobility is impaired, the compensation mechanism cannot be optimally effectuated, causing the mobility of the arm to remain well below 90 degrees Forward flexion. This is the reason for the patient's enthusiastic reaction to the mobilization of the scapula and the clavicle as this almost instantly results in the ability to move the arm up to 90 degrees Forward flexion.

The patient experiences the increase in mobility as if it were an increase in the mobility of the shoulder; when, in fact, it is only the compensation mechanism that has been optimized.



*In other words: once the compensation mechanism has been optimized it is possible to move the arm 90 degrees towards the front and 45 degrees towards the side.*