

FOLLOW-UP



SpineCor
Assistant
Software

SAS version 1.20
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SPINECOR
MOVEMENT IS LIFE

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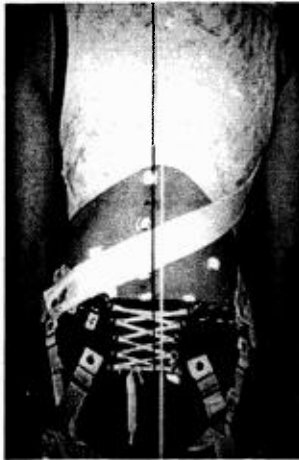
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RIGHT THORACIC TYPE I (RT1)

STEP 1:

PHOTOS: Right Thoracic Type I

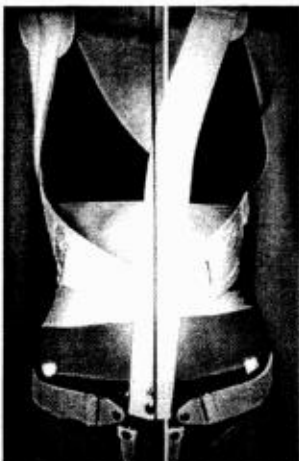
Back view with the brace (first type of fitting):



- Once the brace is in place, the postural disturbances of the thorax and of the shoulder girdle revealed during the pre-brace evaluation must be alleviated or even hypercorrected. However, the desired postural hypercorrection can be achieved only progressively after several weeks or months of a compliant brace wearing.
- The right thoracic prominence when bending forward can remain identical to the one without the brace or can be reduced, but must be never increased.
- The patient must not feel pain or major discomfort, at the most, she can be uncomfortable in the first few days with a new posture, which is unusual for her.

Please note that there are two different fittings.

Front view with the brace (first type of fitting):



- The thoracic bands must be crossed sufficiently low so as not to cause gastric discomfort. In the same manner the tension of these bands must not be harmful, its efficiency depends more on the direction given by a very moderate-tension fitting, than by a forced movement.
- The band that crosses between the breasts must not be uncomfortable: the small accessory called velcro-velcro enables to position and stabilise this band, for example, by fitting it in front of the thoracic band #2.
- The more significant the correction is, the more the left thoracic flare will become prominent, and the right will tend to be depressed, an effect, which should be sought progressively.

Please note that there are two different fittings.

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

PHOTOS: Right Thoracic Type I

Back view with the brace (second type of fitting):



- Once the brace is in place, the postural disturbances of the thorax and of the shoulder girdle revealed during the pre-brace evaluation must be alleviated or even hypercorrected. However, the desired postural hypercorrection can be achieved only progressively after several weeks or months of a compliant brace wearing.
- The right thoracic prominence when bending forward can remain identical to the one without the brace or can be reduced, but must be never increased.
- The patient must not feel pain or major discomfort, at the most, she can be uncomfortable in the first few days with a new posture, which is unusual for her.

Please note that there are two different fittings.

Front view with the brace (second type of fitting):

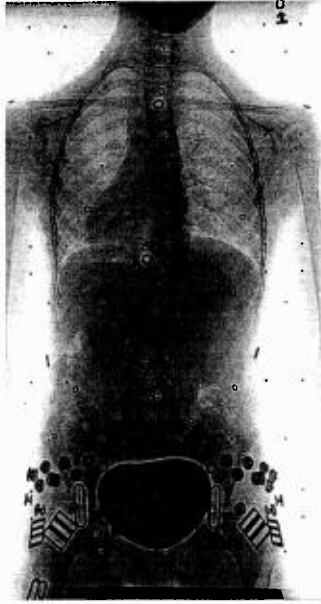


- The thoracic bands must be crossed sufficiently low so as not to cause gastric discomfort. In the same manner, the tension of these bands must not be harmful, its efficiency depends more on the direction given by a very moderate tension, than by a forced movement.
- The band that crosses between the breasts must not be uncomfortable, the small accessory called velcro-velcro enables to position and stabilise this band by fixing it, for example, in front of the thoracic band #2.
- The more significant the correction is, the more the left thoracic flare will become prominent, and the right one will tend to be depressed, an effect which should be sought progressively.

Please note that there are two different fittings.

X-RAYS: Right Thoracic Type I

Frontal view with the brace:



It is obvious that in curves as significant as this, with an initial Cobb angle of 36° , the desired immediate reduction is generally moderate. Here the immediate reduction is rather significant, with the curve measured at 21° in brace. The patient is young and the curve is flexible.

The positive signs are:

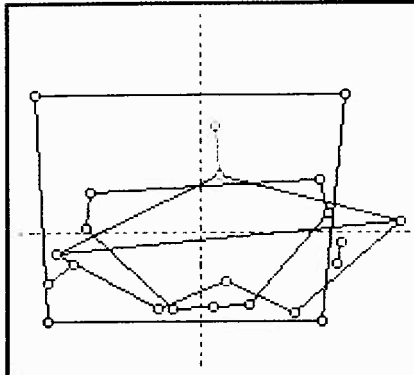
- The reduction of Cobb angle more than 5° .
- The decrease in the vertebral rotation, particularly of the sub-apexian and lumbar vertebrae.
- More symmetric position of the ribs.

During the following weeks and months, it is essential to proceed with the necessary adjustments in order to achieve further reduction. The prognosis is better, if the Cobb angle reduction is progressive and exceeds 50%, meanwhile the tension of the corrective bands remains reasonable.

Due to the flexibility of the curve and the young age of the patient (10 years), the immediate reduction here is rather important, the curve measuring at 21° .

3D POSTURES: Right Thoracic Type I

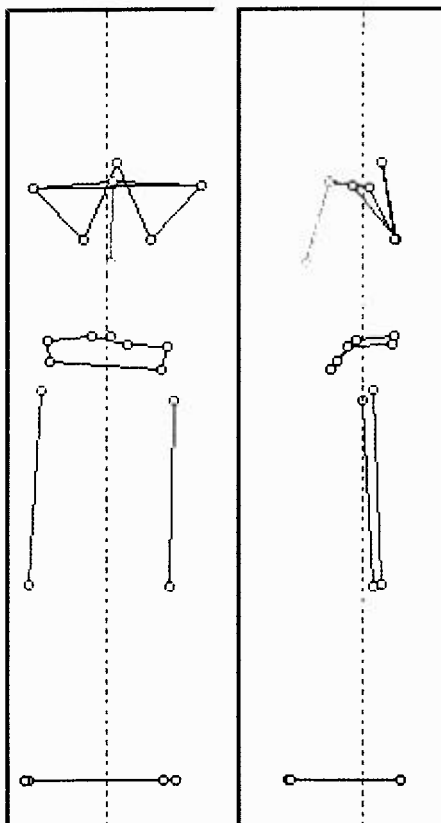
Apical view with the brace:



This view is the most informative in the follow-up in brace.

Note:

- The obvious reduction of the counterclockwise rotation of the shoulders.
- The asymmetry of the positioning of the shoulder blades is still visible.



Frontal view with the brace:

This view is less informative for the control of the brace fitting; you can only note a reduction of the right lateral shift of the trunk.

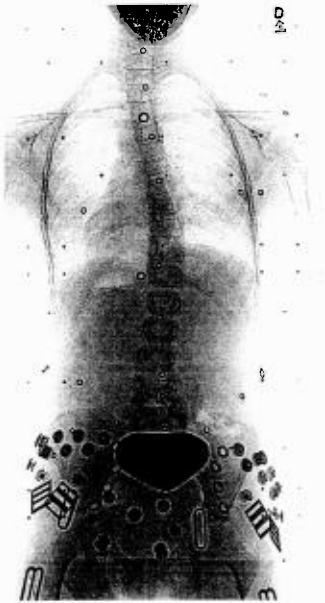
Sagittal view with the brace:

This view is also barely informative since the spine is represented only by T1 and S1.

STEP 2:

X-RAYS: Right Thoracic Type I

Frontal view with the brace:

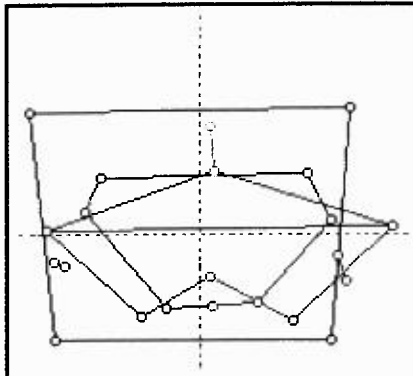


Note:

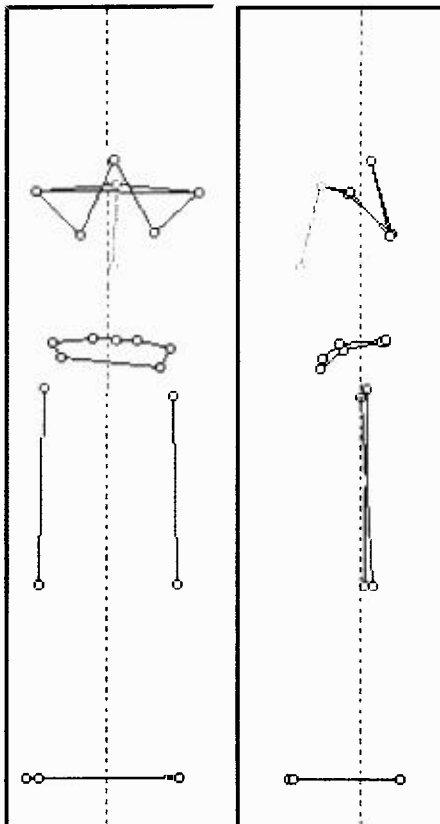
- A reduction of the Cobb angle of the right thoracic curve to the 16° value.
- A reduction of the cervico-thoracic countercurve.
- Less significant disorientation and deformation of the thorax.

3D POSTURES: Right Thoracic Type I

Apical view with the brace:



- The complete absence of rotation of the shoulder girdle, which is adequately centred in relation to the base of support.
- The pelvis is adequately centred in relation to the base of support.



Frontal view with the brace:

The posture in this plane appears almost normal.

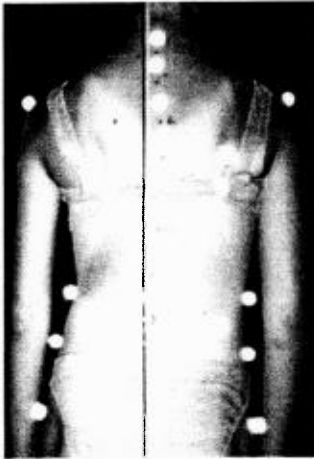
Sagittal view with the brace:

Note that the spine is represented only by T1 and S1.

STEP 3:

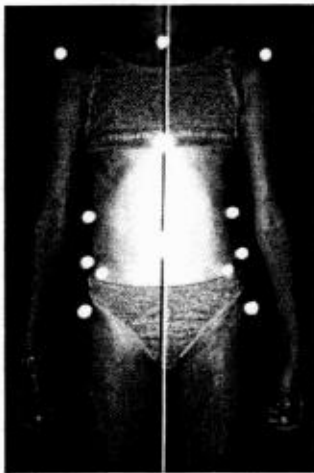
PHOTOS: Right Thoracic Type I

Back view without the brace:



A marked improvement of the posture in relation to the pre-treatment aspect.
However, the posture is not normalised yet.

Front view without the brace:

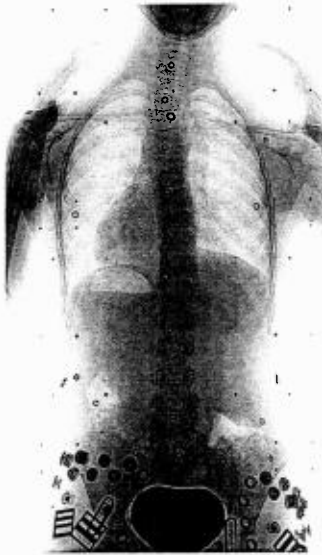


The postural aspect is normal.

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Right Thoracic Type I

Frontal view with the brace:



- The reduction obtained after 7 months of compliant brace wearing is almost complete.
- The cervicothoracic countercurve has not increased.

Sagittal view with the brace:



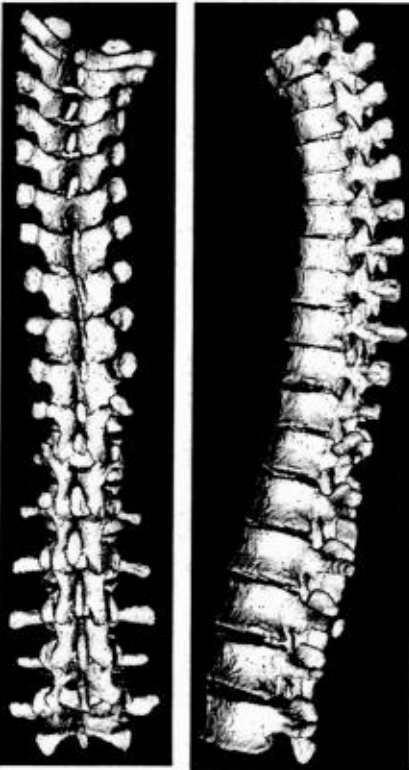
- The sagittal curves are normalised, indicating the three-dimensional reduction of the right thoracic curve.
- The reappearance of the normal kyphosis is always positive as long as there is a real reduction of the curve in the frontal plane.

3D RECONSTRUCTIONS: Right Thoracic Type I

Apical view with the brace:



Permits to affirm that the reduction noticed on the x-rays is real, e.g. three-dimensional.



Frontal view with the brace:

Confirms the x-ray aspect.

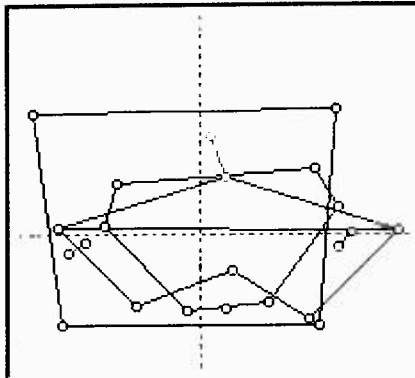
Sagittal view with the brace:

Confirms the x-ray aspect.

Note that the lumbar lordosis is incomplete because S1 and the L5-S1 disk are not present in the graph.

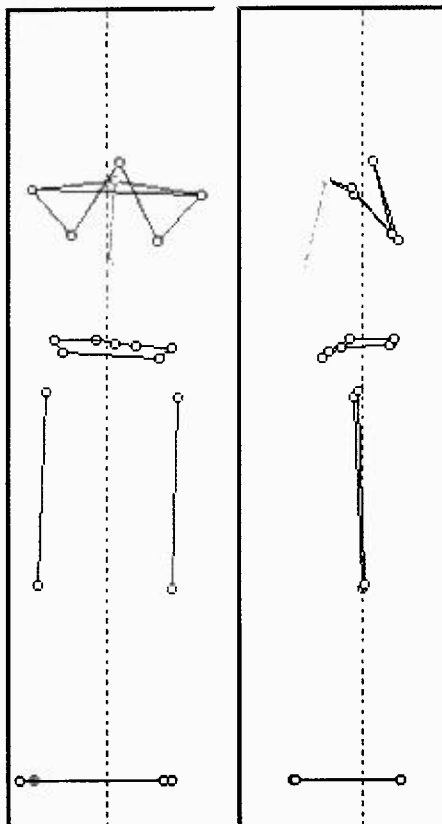
3D POSTURES: Right Thoracic Type I

Apical view with the brace:



The postural hypercorrection is desired here. It is represented by:

- The counterclockwise rotation of the pelvis and the thorax, when it is shown.
- The tendency to the clockwise rotation of the shoulder girdle.



Frontal view with the brace:

No notable modifications in this plane.

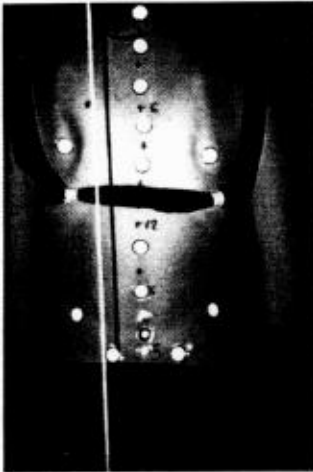
Sagittal view with the brace:

No notable modifications in this plane.

STEP 4:

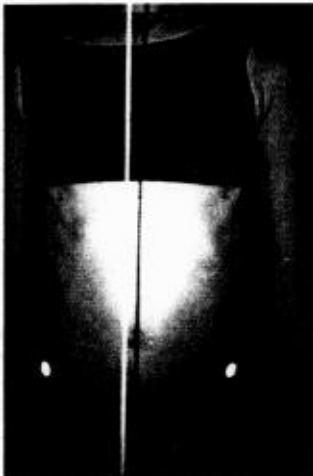
PHOTOS: Right Thoracic Type I

Back view with the brace:



The posture is normalised, but the child does not adequately balance her body weight (aspect of the global translation of the trunk to the right) due to a slight difference in the length of the lower extremities ($R < L$).

Front view with the brace:



The posture is normalised, but the child does not adequately balance her body weight (aspect of the global translation of the trunk to the right) due to a slight difference in the length of the lower extremities ($R < L$).

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Right Thoracic Type I

Frontal view with the brace:



When the flexibility of the curve permits it, it is desirable to inverse the curve for a few degrees, particularly if the growth potential is still significant.

The tension in the corrective bands must remain reasonable and must not cause any pain or skin lesion.

Sagittal view with the brace:



The sagittal aspect remains within the limits of the norm.

X-RAYS: Right Thoracic Type I

Frontal view without the brace:



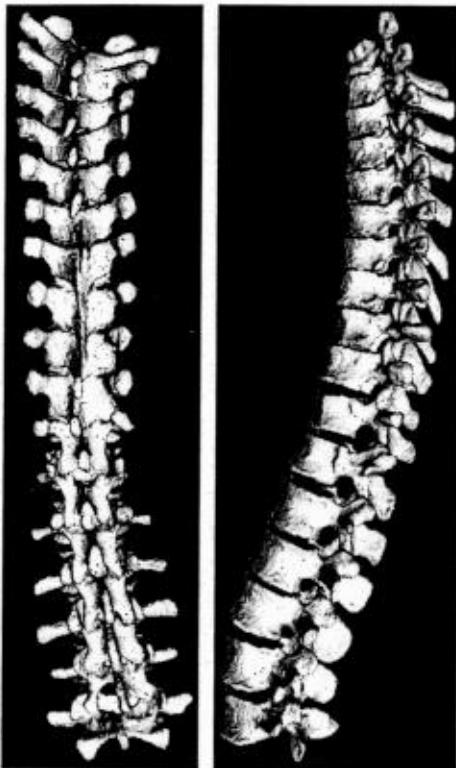
- After more than a year of the brace wearing, a high percentage of the obtained reduction persists even without the brace. Here the Cobb angle is measured at 8°.
- If the growth has not finished, it is not desirable to withdraw the brace completely, but the time of wearing can be reduced, preserving at least 10 hours during the daytime.

3D RECONSTRUCTIONS: Right Thoracic Type I

Apical view with the brace:



This view confirms the tendency to the inversion of the thoracic curve suspected on the x-ray.



Frontal view with the brace:

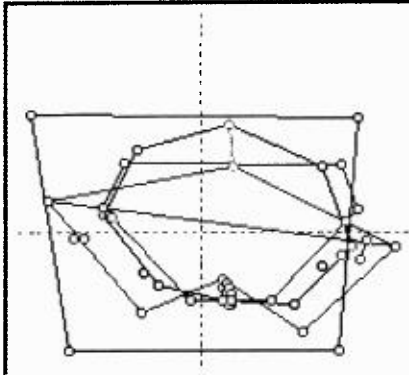
Confirms the x-ray aspect.

Sagittal view with the brace:

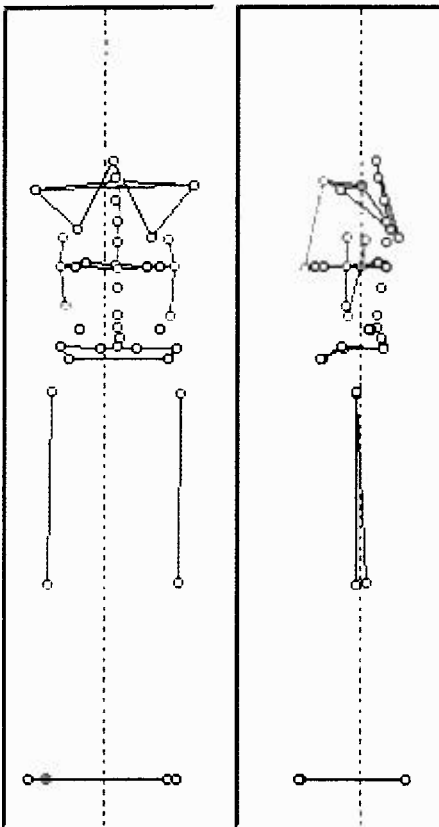
Confirms the x-ray aspect.

3D POSTURES: Right Thoracic Type I

Apical view with the brace:



The postural hypercorrection is desired and is represented here mainly by a clockwise rotation of the shoulder girdle.



Frontal view with the brace:

No notable postural modifications.

Sagittal view with the brace:

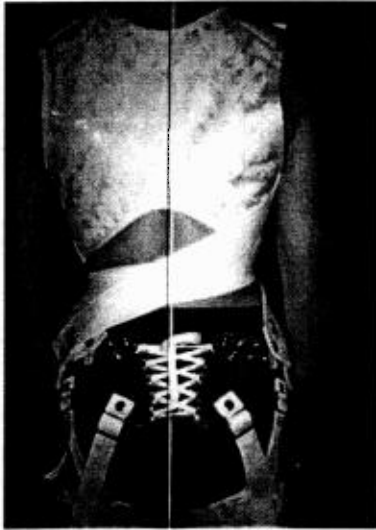
No notable postural modifications.

RIGHT THORACIC TYPE II (RT2)

STEP 1:

PHOTOS: Right Thoracic Type II

Back view with the brace:



It is normal to observe either a reduction of the right lateral shift, or a slight left lateral shift. The counterclockwise inclination of the thorax must be reduced.

The prominence must never increase in the brace. It must be even reduced.

The pelvic base must remain in place when moving about in the brace. Otherwise, either the pelvic base is not fitted low enough or is not adjusted adequately, or there is too much traction on the bands.

Front view with the brace:



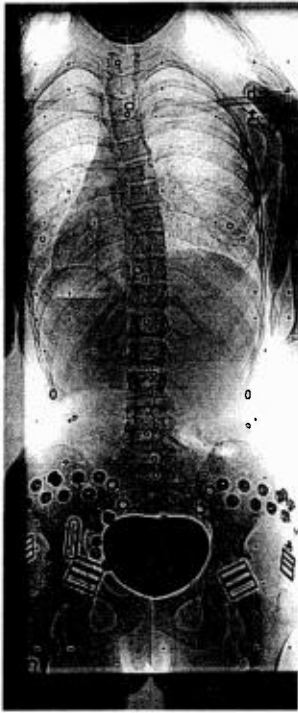
In order to avoid any anterior slipping of the left shoulder band, a small accessory called velcro-velcro can be placed between this band and the right thoracic band to stabilise the former.

The anterior part of the pelvic base must not shift to the left. If this occurs, it is either because the pelvic base is not fitted low enough or is not adjusted adequately, or there may be too much traction on the left shoulder band.

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Right Thoracic Type II

Frontal view with the brace:



The first x-ray after the brace fitting demonstrates a clear start of the correction:

- The Cobb angle diminishes (here it is 12° , that indicates an immediate reducibility exceeding 50%).
- The vertebral rotation is practically negligent.
- The segment under the apex is presently straight.
- The segment over the apex will be reduced secondly, its aspect should not be a subject of concern now.
- The cervicothoracic countercurve can be reduced only thirdly.

The result indicates that the fitting of the brace is correct. The reducibility of the curves varies from patient to patient. The effect of the brace is gradual and so is the reduction of the Cobb angle. The period of wearing the brace, which is required to obtain the desired correction, is individual too.

Sagittal view with the brace:



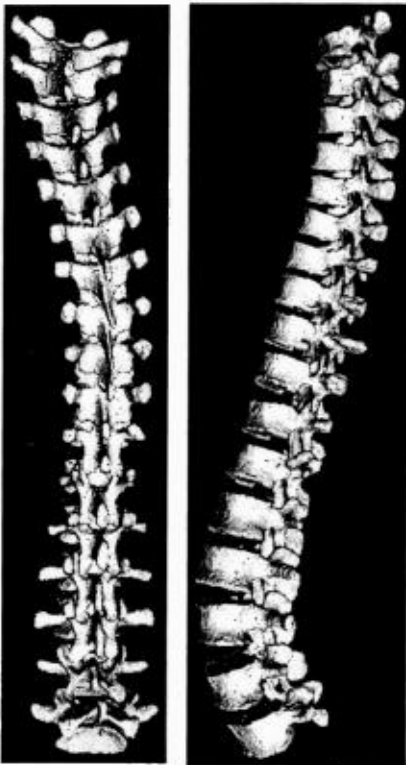
For the thoracic curve, it is important not to reduce the kyphosis in relation to the initial x-ray. When the reducibility permits a normalisation of the kyphosis, it will take place gradually.

3D RECONSTRUCTIONS: Right Thoracic Type II

Apical view with the brace:



This view permits to affirm the three-dimensional nature of the obtained reduction.



Frontal view with the brace:

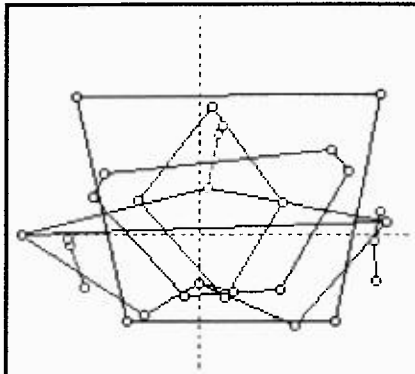
Confirms the x-ray findings.

Sagittal view in the brace:

Confirms the x-ray findings.

3D POSTURES: Right Thoracic Type II

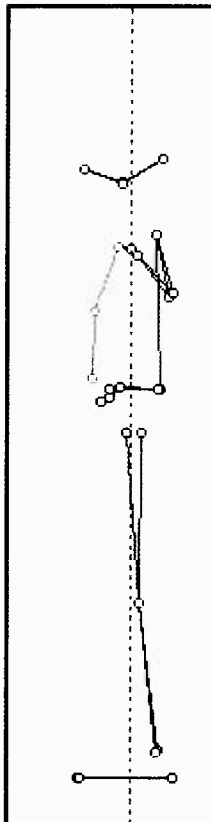
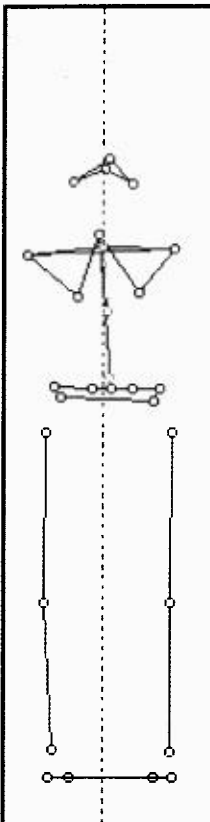
Apical view with the brace:



On this graph, you can see two desirable modifications:

- The detorsion of the shoulder girdle (which can be even exaggerated later).
- The translation to the left of the shoulder girdle.

N.B.: The counterclockwise rotation of the pelvis is a secondary effect and should not be paid much attention.



Frontal view with the brace:

- The shift to the left of the shoulder girdle, which is desired.
- The counterclockwise tilt of the shoulder girdle is corrected.

Sagittal view with the brace:

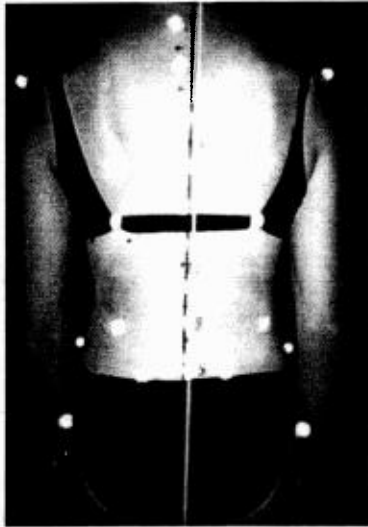
Note that the straight line between T1 and S1 does not represent the actual position of the spinous processes, since they are covered by the brace. Therefore it does not have any clinical significance.

The only visible modification in this plane corresponds in fact to the counterclockwise rotation of the pelvis in the apical plane.

STEP 2:

PHOTOS: Right Thoracic Type II

Back view without the brace:



In a relatively short term, depending on the reducibility of the curve, the posture will tend to normalise, which is marked here with:

- The elimination of the counterclockwise tilt of the shoulders.
- The more or less complete normalisation of the position of the shoulder blades.
- The symmetry of the waist angle.
- A less visible prominence when standing.

N.B.: The pelvis should remain approximately balanced.

Front view without the brace:



On this photo the posture should look almost normal, except the hollow of the left costal flare, which would normalise only at the end of the growth spurt of the adolescence, after the thoracic peak of the growth.

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Right Thoracic Type II

Frontal view with the brace:



Note that the Cobb angle of the thoracic curve diminishes progressively (7°) after the brace has been worn for several weeks. Likewise, the cervicothoracic countercurve begins to disappear. There is practically no vertebral rotation.

Sagittal view with the brace:



After the brace has been worn for several weeks, note that the kyphosis begins to normalise.

3D RECONSTRUCTIONS: Right Thoracic Type II

Apical view with the brace:



This view confirms the three-dimensional aspect of the obtained reduction.



Frontal view with the brace:

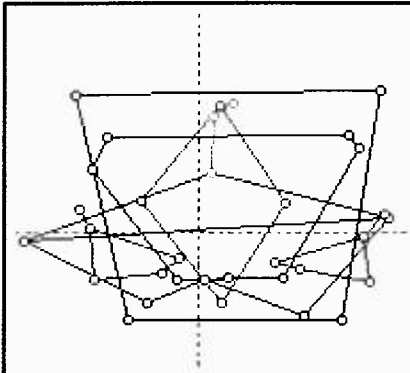
Confirms the x-ray findings.

Sagittal view with the brace:

Confirms the x-ray findings.

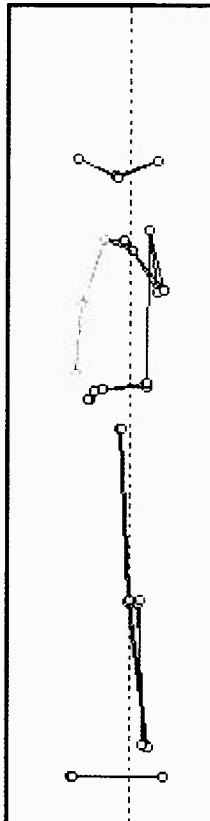
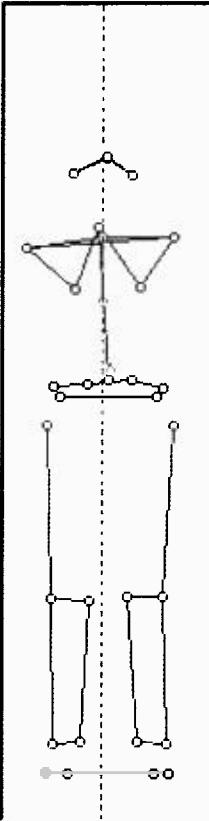
3D POSTURES: Right Thoracic Type II

Apical view with the brace:



The following modifications are desired:

- The detorsion of the shoulder girdle (which could subsequently even be exaggerated)
- The left shift of the same girdle.
- The levels are placed correctly one in relation to another, with an equal slight shift to the left.
- The correction of the position of the shoulder blades is not complete, the left one is more flattened than the right one, which is slightly detached.



Frontal view with the brace:

- The left lateral shift of the shoulder girdle, which is a desired effect.
- The initial counterclockwise tilt of the shoulder girdle is corrected.

These two effects can eventually be slightly increased.

Sagittal view with the brace:

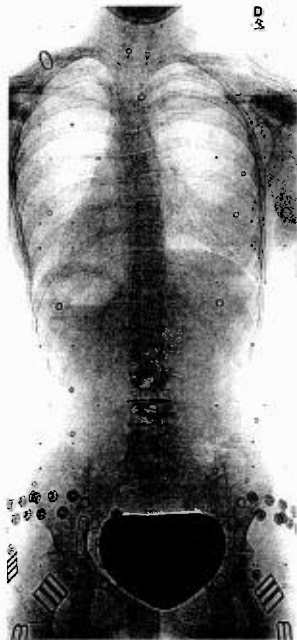
Note that the straight line between T1 and S1 does not represent the actual position of the spinous processes, since they are covered by the brace. Therefore it does not have any clinical significance.

No notable modifications in this plane.

STEP 3:

X-RAYS: Right Thoracic Type II

Frontal view with the brace:



- In relation to the previous x-ray, the Cobb angle of the right thoracic curve remains at the 7° value, no underlying curve has appeared and the overlying cervicothoracic curve is slightly reduced. These x-ray modifications confirm a good reducibility of the curve.
- No general modification of the brace has been made since the initial fitting. The tension has never been exaggerated; moreover, between the two last x-rays, there has not been any change in the fitting, the observed modifications correspond to the maintaining of the corrective movement.
- Subsequently, the brace remains adjusted in the same manner, the tension should not be emphasised. The only adjustments would be in relation to the growth in volume and length of the trunk of the young girl.

Sagittal view with the brace:



Sagittal aspect within the limits of the norm.

3D RECONSTRUCTIONS: Right Thoracic Type II

Apical view with the brace:



This view leads to a conclusion, that all the possible reduction is already achieved.

Due to the moderate but not negligent vertebral deformations, an effort to exaggerate the corrective movement results only in the inclination of the upper spine, without an additional reduction. Note that the patient is near maturity.



Frontal view with the brace:

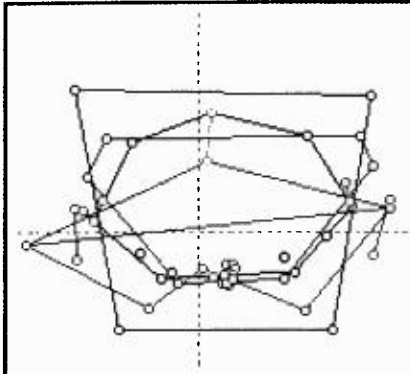
Confirms the x-ray findings.

Sagittal view with the brace:

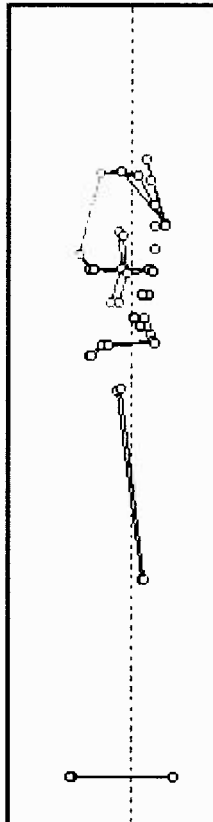
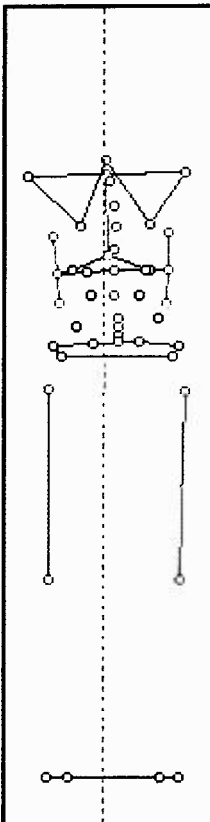
The growth of the posterior structures of the vertebrae is not completed, which induces a temporary effect of hypokyphosis, that is acceptable.

3D POSTURES: Right Thoracic Type II

Apical view without the brace:



The postural aspect is practically normalised.



Frontal view without the brace:

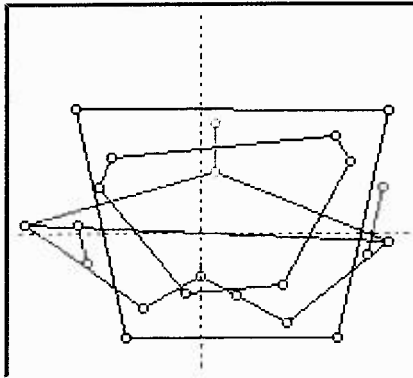
The postural aspect is practically normalised.

Sagittal view without the brace:

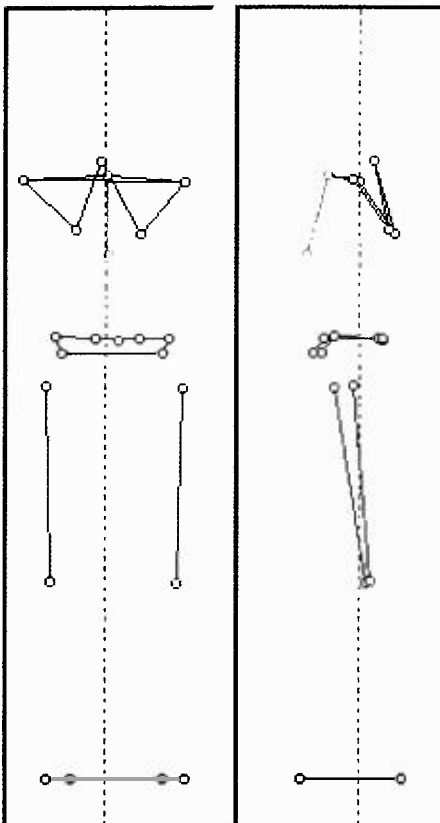
The postural aspect is practically normalised.

3D POSTURES: Right Thoracic Type II

Apical view with the brace:



The counterclockwise rotation of the pelvis is in relation to an attempt to exaggerate the corrective movement.



Frontal view with the brace:

No notable modifications on this view.

Sagittal view with the brace:

On this view, no actual sagittal anomaly can be noted.

RIGHT THORACIC LEFT LUMBAR TYPE I (RTLL1)

STEP 1:

PHOTOS: Right Thoracic Left Lumbar Type I

Back view with the brace:



Once the brace is fitted, the posture corresponds to the one induced by the corrective movement, i.e.:

- horizontal clockwise detorsion of the shoulder girdle;
- moderate frontal counterclockwise tilt of the thorax;
- generally, horizontal counterclockwise rotation of the pelvis.

The corrective movement must never be forced, i.e. the tension of the bands must remain acceptable and permit a gradual reducibility, which increases when the compliance for wearing the brace is adequate.

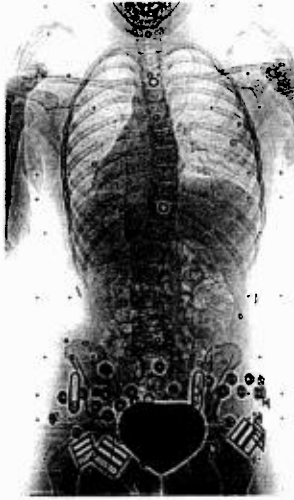
Front view with the brace:



The postural aspect may seem to be modified excessively but is not really problematic. If the pelvic base has a tendency to rise or turn or if the bolero does not remain in place, there may be too much tension on the bands. Before coming to this conclusion, verify the fitting of the pelvic base.

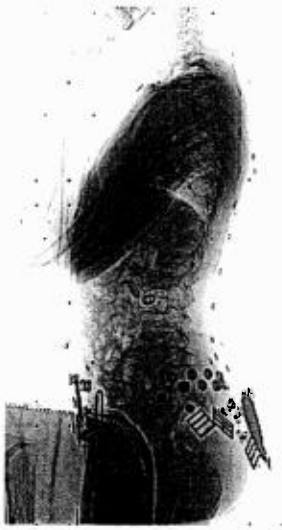
X-RAYS: Right Thoracic Left Lumbar Type I

Frontal view with the brace:



This x-ray is taken with the brace. Generally, the curves should not be increased, but should tend to be reduced. This reduction varies according to the reducibility of the curves. In this case, the Cobb angles are brought to 18° in thoracic and 14° in lumbar (the reducibility is very significant). Note that one of the curves could be more reducible than the other and therefore the changes in the thoracic and lumbar angles are not necessarily simultaneous even though the goal remains to reduce the curves in approximately the same way. If the reducibility is very good, the immediate reduction can reach 30 to 50%. However, a gradual reduction is often more beneficial than an abrupt immediate correction.

Sagittal view with the brace:



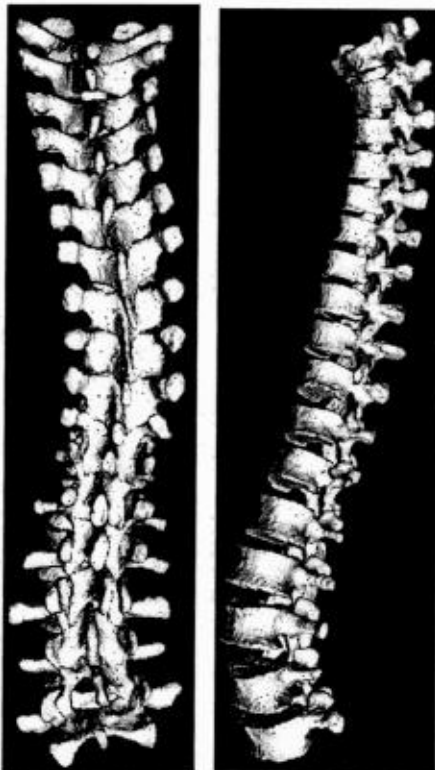
In this type of scoliosis, the x-ray with the brace in place, shows little or no modifications of the initial sagittal curves.

3D RECONSTRUCTIONS: Right Thoracic Left Lumbar Type I

Apical view with the brace:



Permits to affirm the three-dimensional character of the obtained reduction.



Frontal view with the brace:

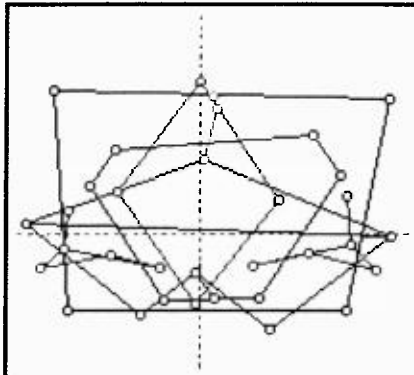
Confirms the x-ray findings.

Sagittal view with the brace:

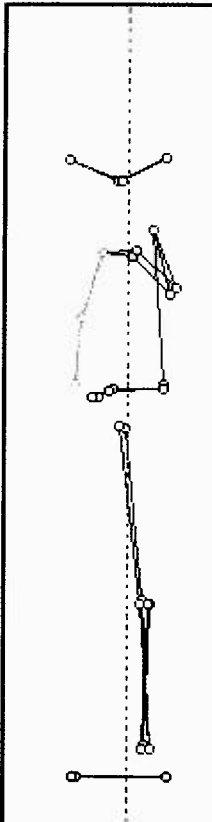
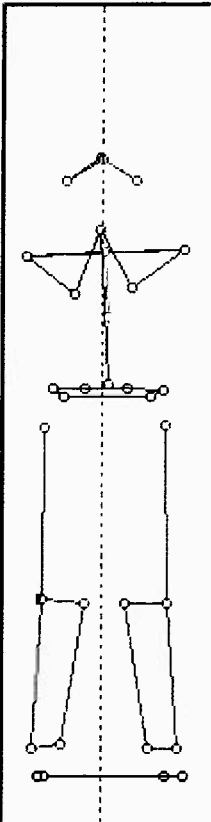
Confirms the x-ray findings.

3D POSTURES: Right Thoracic Left Lumbar Type I

Apical view with the brace:



- In this view, it is important to note a tendency for a clockwise derotation of the shoulder girdle and counterclockwise derotation of the pelvis. It is not necessary for this detorsion to be complete, it can be only partial and gradual. Later, it can even be exaggerated. The result is always guided by the reducibility.
- The three levels are either centred or very slightly shifted to the left in relation to the base of support.



Frontal view with the brace:

In this view, as a rule, no significant modification should be registered apart from a discreet frontal counterclockwise tilt of the thorax and/or the shoulders.

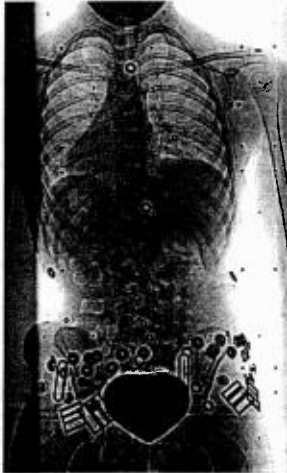
Sagittal view with the brace:

In this view, no significant modification is registered. Note however, that the sagittal aspect of the spine is not truly represented, because here the spine is shown as a straight line joining T1 and S1.

STEP 2:

X-RAYS: Right Thoracic Left Lumbar Type I

Frontal view with the brace:



As long as the brace is worn regularly, a progressive reduction is obtained with time which depends on:

- The reducibility of the initial curve.
- The reducibility increased with time.

The initial insult constitutes the limit of what is possible to obtain and generally corresponds to the bone deformities linked to scoliotic disease.

On this frontal x-ray, in relation to the previous one, the brace is still fitted in the same way as at first, the bands are readjusted without exaggerating the tension. The thoracic curve is clearly reduced (Cobb angle is 7°), the lumbar curve is evidently less reducible and therefore should be watched more closely (Cobb angle is 16°).

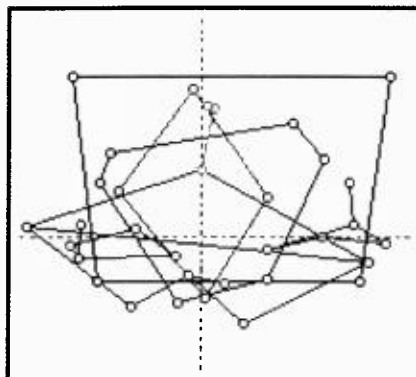
Later, it would be probably worthwhile to insist on the frontal inclination to the left of the trunk, rather than on the detorsion that was quickly positive at the level of the thoracic curve.

N.B.: The lateral view is not shown because of the absence of modifications of the sagittal curves.

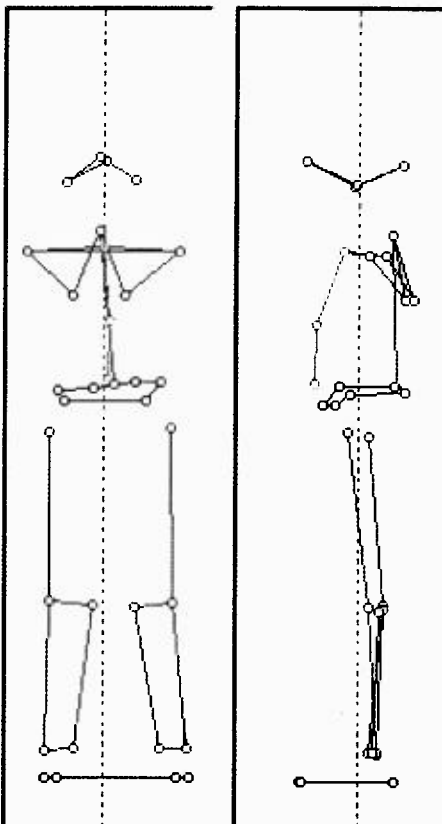
3D POSTURES: Right Thoracic Left Lumbar Type I

Apical view with the brace:

This view clearly demonstrates the desired detorsion, which is clockwise for the shoulder girdle and counterclockwise for the pelvis and which essentially enables the correction of the thoracic curve. Note that there is little or no left shift of the levels in relation to the base of support.



Note that generally in order to obtain a progressive reduction of the curves and a gradual postural normalisation, a temporary controlled postural disorganisation can often take place. This postural disorganisation is acceptable as long as it is well tolerated by the patient and the progressive reduction of the curves is confirmed.



Frontal view with the brace:

At this stage, the emphasis has been placed on the detorsion.

Note the left frontal inclination aspect of the spinal column, which actually corresponds to an exaggerated clockwise rotation of the shoulders and counterclockwise of the pelvis, not a real inclination.

Sagittal view with the brace:

The modification of the orientation of the levels is brought by the exaggerated detorsion resulting from the fitting and it is acceptable.

STEP 3:

X-RAYS: Right Thoracic Left Lumbar Type I

Frontal view with the brace:



The thoracic and lumbar curves are both measured at 8°.
The reduction (>50%) obtained due to the movement of detorsion between the shoulders and the pelvis is necessary accompanied by a left frontal inclination of the trunk, visible on the x-ray.
This aspect is acceptable and even desirable.

Sagittal view with the brace:



No modifications in this plane.
The sagittal curves are within the limits of the norm.

3D RECONSTRUCTIONS: Right Thoracic Left Lumbar Type I

Apical view with the brace:



This view permits to affirm the three-dimensional character of the obtained reduction.



Frontal view with the brace:

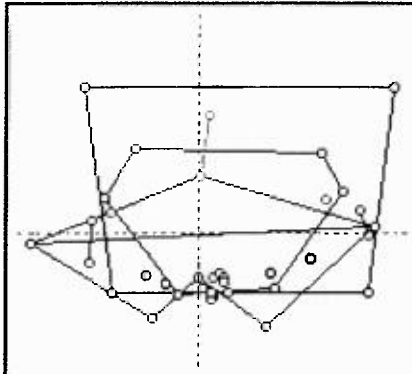
Confirms the x-ray findings.

Sagittal view with the brace:

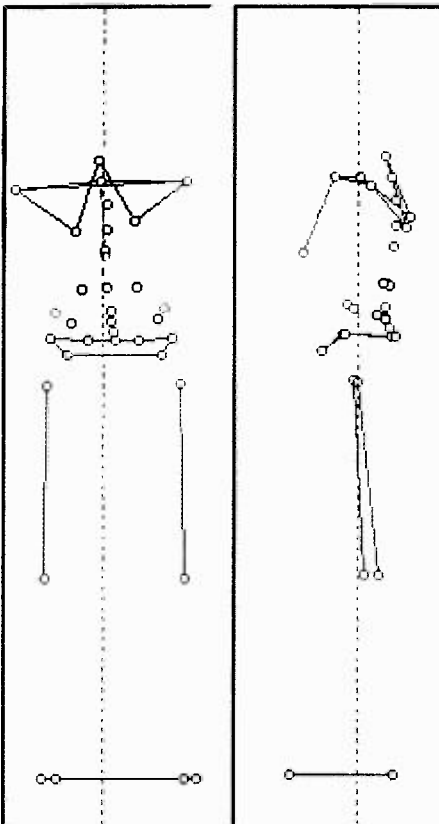
Confirms the x-ray findings.

3D POSTURES: Right Thoracic Left Lumbar Type I

Apical view without the brace:



The posture is practically normal in this plane.
The significant postural modifications imposed previously by the brace were only temporary and do not persist without the brace.



Frontal view without the brace:

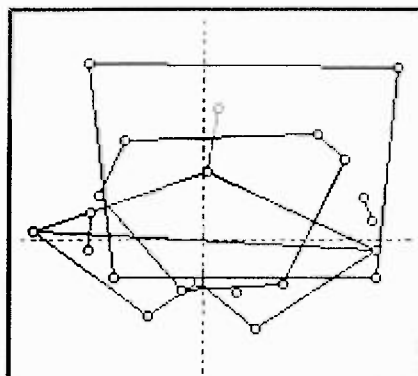
The posture is practically normal in this plane.

Sagittal view without the brace:

The posture is practically normal in this plane.

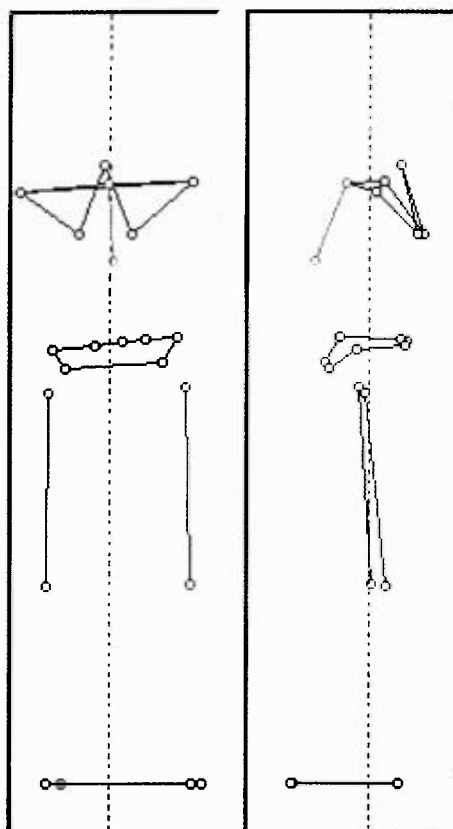
3D POSTURES: Right Thoracic Left Lumbar Type I

Apical view with the brace:



The exaggerated modifications of the posture seen previously have spontaneously diminished with the reduction of the curves.

There persists only a tendency for the counterclockwise rotation of the pelvis and clockwise rotation of the shoulders, which is positive.



Frontal view with the brace:

The posture is practically normal in this plane.

Sagittal view with the brace:

The posture is practically normal in this plane.

RIGHT THORACIC LEFT LUMBAR TYPE III (RTLL3)

STEP 1:

PHOTOS: Right Thoracic Left Lumbar Type III

Back view with the brace:



The efficiency of the brace fitting is controlled immediately by means of:

- Measuring the prominences in brace, which in comparison with the values obtained the same day must show a reduction (more or less significant), but never an aggravation, which would signalise an incorrect brace fitting.
- A slight inclination of the trunk in relation to the pelvis.
- An inversion of the asymmetry of the waist angles, which is frequently evident.

Front view with the brace:



Confirms the postural modifications found in the back view.

X-RAYS: Right Thoracic Left Lumbar Type III

Frontal view with the brace:



Control of the fitting of the brace: the x-ray permits to ascertain the efficiency of the brace.

On the day of the brace fitting, the frontal x-ray shows a moderate reduction of the curves (thoracic Cobb angle is 10° , lumbar Cobb angle is 12°), which is sufficient to affirm the appropriateness of the fitting.

After one month of wearing the brace and a simple readjustment of the bands that have become loose:

- The thoracic and lumbar Cobb angles diminish to 5° and 4° respectively.
- The rotation of the apaxian vertebrae has not changed, it seems to be greater, but should not be judged as a negative sign. In this plane, this aspect will be slowly modified with time.

Sagittal view with the brace:



After one month of wearing the brace and a simple readjustment of the bands that have become loose:

- The kyphosis and the lordosis are within the limits of the norm, measured here at 28° and 46° respectively.
- The sagittal balance is adequate.

3D RECONSTRUCTIONS: Right Thoracic Left Lumbar Type III

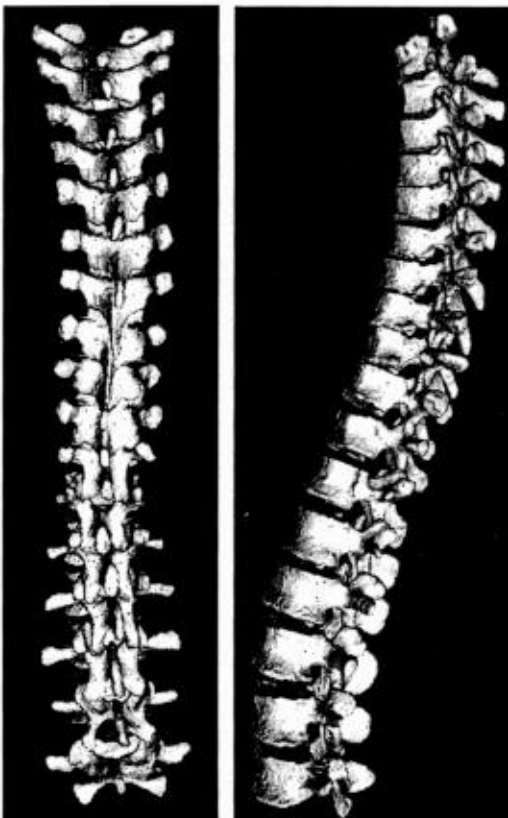
Apical view with the brace:



Controls the fitting of the brace.

After one month of wearing the brace:

- Confirms the reduction of the curves.
- Shows the persistence of the left inclination, and more or less left translation of the spine starting from L4.



Frontal view with the brace:

Controls the fitting of the brace.

After one month of wearing the brace:

- Confirms the positive aspects found on the frontal and sagittal x-rays.

Sagittal view with the brace:

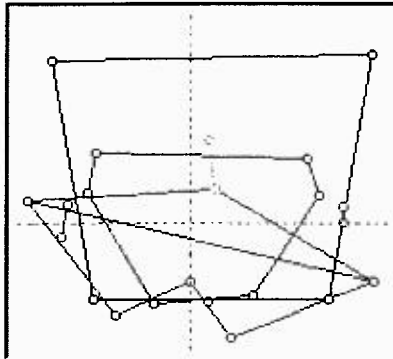
Controls the fitting of the brace.

After one month of wearing the brace:

- Confirms the positive aspects found on the frontal and sagittal x-rays.

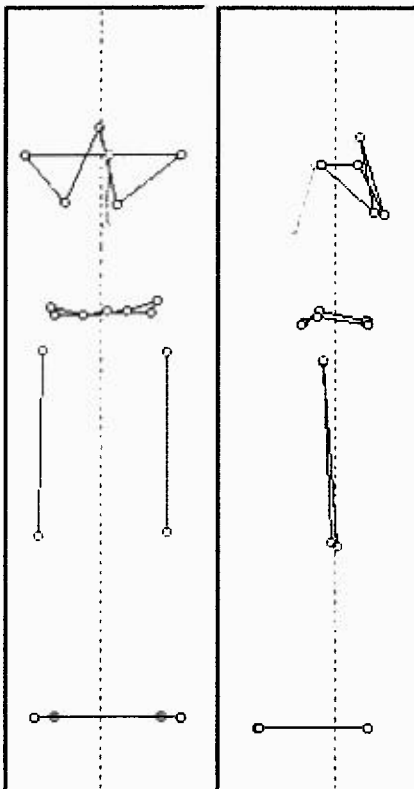
3D POSTURES: Right Thoracic Left Lumbar Type III

Apical view with the brace:



Controls the fitting of the brace.

Demonstrates the desired detorsion between the shoulders and the pelvis, with an accentuation of the clockwise rotation of the shoulders in relation to the pelvis. The pelvis still has a slight clockwise rotation due to the rigidity of the lumbar curve, but in fact its position has been improved in this plane.



Frontal view with the brace:

Controls the fitting of the brace.

No significant modifications in this plane other than slight left inclination of the trunk.

Sagittal view with the brace:

Controls the fitting of the brace.

- Note that the sagittal curves are not represented here since the spinous processes are covered by the brace.
- No notable modification of the sagittal balance.

STEP 2:

PHOTOS: Right Thoracic Left Lumbar Type III

Back view with the brace:



Possible modifications:

In order to continue the reduction of the curves after several weeks of wearing the brace, it can be often worthwhile to insist on the detorsion between the shoulders and the pelvis.

For this purpose, only the left shoulder band (#3) fitting will be modified to reinforce the right shoulder band (#4) action. Instead of being fixed directly in front, the band #3 will cross in front to the right, then cross in the back to the left and return to be fixed in front on the left snap button of the anterior part of the pelvic base. It will be necessary then to fix the right shoulder band (#4) on the right button of the same anterior part.

Front view with the brace:



Possible modifications:

In order to continue the reduction of the curves after several weeks of wearing the brace, it can be often worthwhile to insist on the detorsion between the shoulders and the pelvis.

For this purpose, only the left shoulder band (#3) fitting will be modified to reinforce the right shoulder band (#4) action. Instead of being fixed directly in front, the band #3 will cross in front to the right, then cross in the back to the left and return to be fixed in front on the left snap button of the anterior part of the pelvic base. It will be necessary then to fix the right shoulder band (#4) on the right button of the same anterior part.

X-RAYS: Right Thoracic Left Lumbar Type III

Frontal view with the brace:



- The Cobb angles diminish to 2° and 1° respectively; the x-ray reduction is almost complete.
- There persists a rotational aspect of the apexian lumbar vertebrae, which is acceptable.

Sagittal view with the brace:



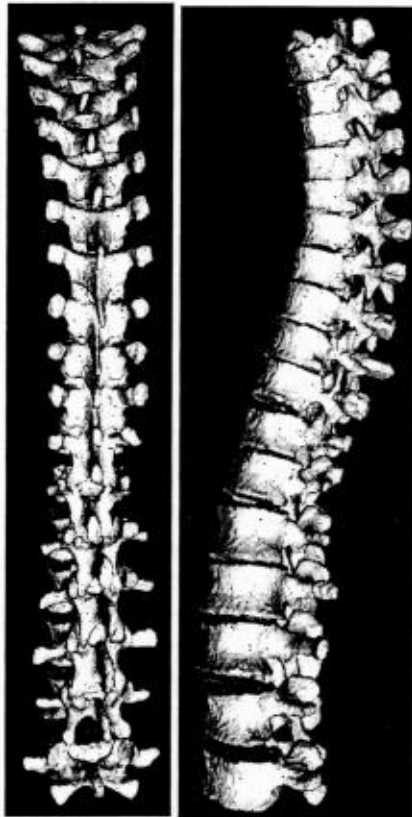
The sagittal curves have normalised, both measuring 38°.

3D RECONSTRUCTIONS: Right Thoracic Left Lumbar Type III

Apical view with the brace:



- Clear reduction of the left inclination of the spine starting at the L4 level, in relation to the previous reconstruction.
- Disappearance of the curves and vertebral rotations found on the initial 3D reconstruction.
- Slight rotation of the whole spine around its axis, which follows the pelvic rotation brought by the brace.



Frontal view with the brace:

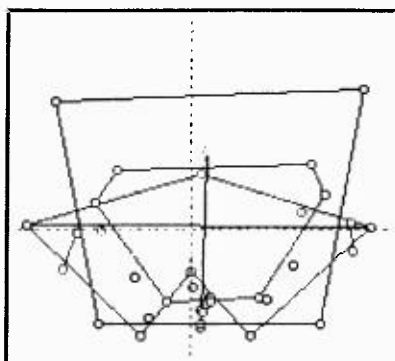
Confirms the frontal x-ray findings.

Sagittal view with the brace:

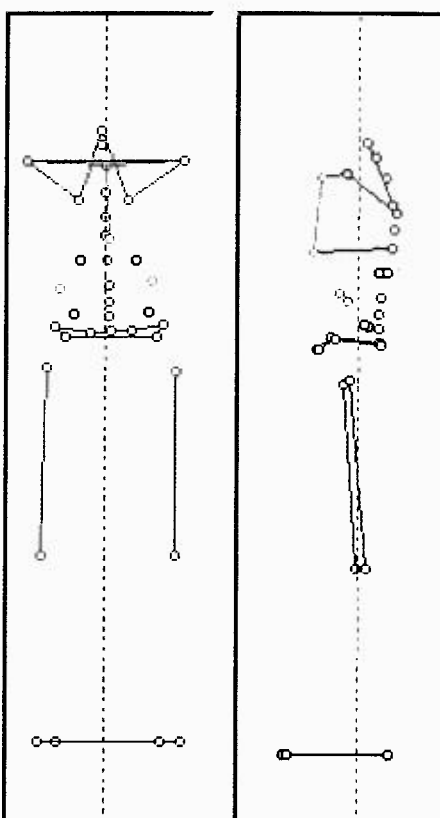
Confirms the sagittal x-ray findings.

3D POSTURES: Right Thoracic Left Lumbar Type III

Apical view without the brace:



- The postural control without the brace brings to a conclusion that the posture is practically normalised at this stage.
- The growth is not finished, and the wearing of the brace is continued (menses has been present for less than a year (11 months) and the Risser sign is 2).



Frontal view without the brace:

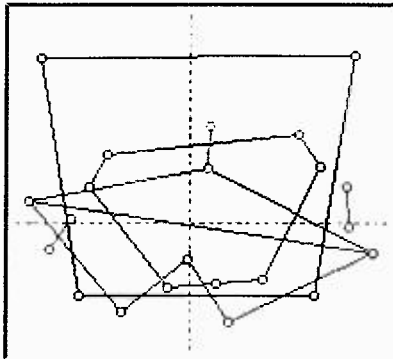
- The postural control without the brace brings to a conclusion that the posture is practically normalised at this stage.
- There persists a very slight left inclination of the trunk in relation to the pelvis.
- The growth is not finished, and the wearing of the brace is continued (menses has been present for less than a year (11 months) and the Risser sign is 2).

Sagittal view without the brace:

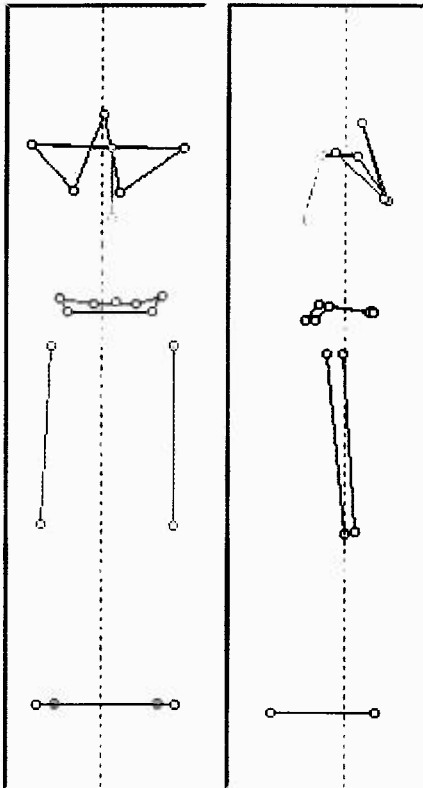
- The postural control without the brace brings to a conclusion that the posture is practically normalised at this stage.

3D POSTURES: Right Thoracic Left Lumbar Type III

Apical view with the brace:



- The apical view in comparison to the previous stage does not show notable modifications and corresponds to the desired changes in posture.



Frontal view with the brace:

- The frontal view in comparison to the previous stage does not show notable modifications and corresponds to the desired changes in posture.

Sagittal view with the brace:

- The sagittal view in comparison to the previous stage does not show notable modifications and corresponds to the desired changes in the posture.

STEP 3:

PHOTOS: Right Thoracic Left Lumbar Type III

Back view without the brace:



Permits to affirm the normalisation of the posture.

Front view without the brace:



Permits to affirm the normalisation of the posture.

X-RAYS: Right Thoracic Left Lumbar Type III

Frontal view with the brace:

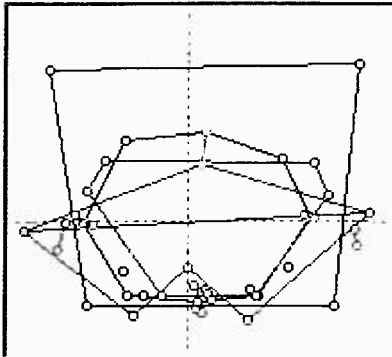


- Disappearance of the frontal curves.
- Very clear reduction of the rotation of the lumbar apaxian vertebrae.

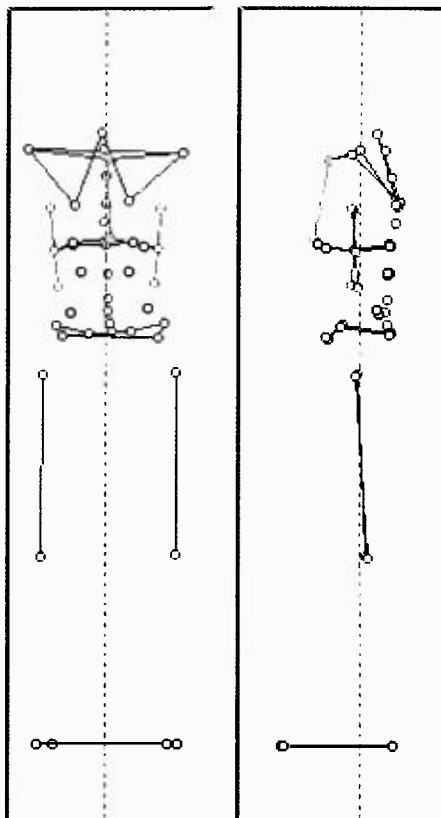
Note : When the cessation of wearing the brace is started, the x-rays will be taken without the brace.

3D POSTURES: Right Thoracic Left Lumbar Type III

Apical view without the brace:



- The posture is considered as normalised.
 - If:
 - The growth velocity is diminished to 3 mm / month at least while measuring the standing height.
 - The patient has been menstruating for two years.
 - The daytime wearing of the brace has permitted to maintain the achieved reducibility.
- in that case, the brace cessation can be considered.



Frontal view without the brace:

- The posture is considered as normalised.

Sagittal view without the brace:

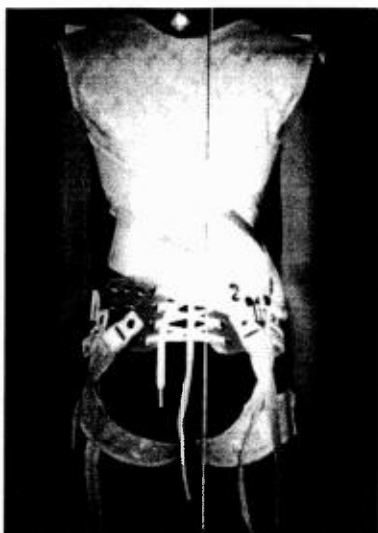
- The posture is considered as normalised.

LEFT THORACOLUMBAR TYPE I (LTL1)

STEP 1:

PHOTOS: Left Thoracolumbar Type I

Back view with the brace:



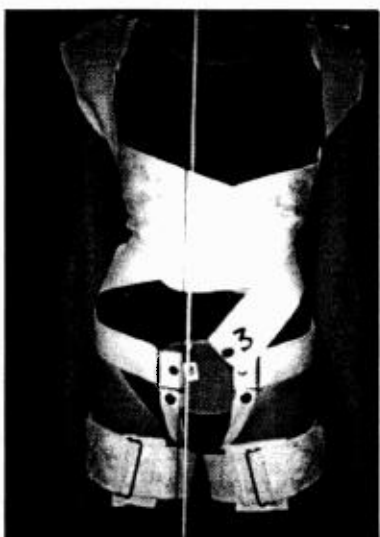
- Once the brace is in place, the obtained result must correspond to the initiation of the static correction, which is more or less significant depending on the reducibility.
- It is the initiated corrective movement that will complete the static correction with time.
- Statically, we must observe a tendency for a counterclockwise tilt of the thorax.
- The prominence in brace should be identical or reduced as compared to the prominence without brace, but never increased.
- For this type of scoliosis, the brace is almost always associated with the wearing of a shoe lift, which is designed to correct the pelvic obliquity.

N.B. If you prescribe a shoe lift:

- Control the prominence with the shoe lift in place. It often increases slightly (a significant increase should not be tolerated).
- With the brace and the shoe lift, the prominence is either identical to the one measured initially, or very slightly increased, or even slightly reduced.

The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

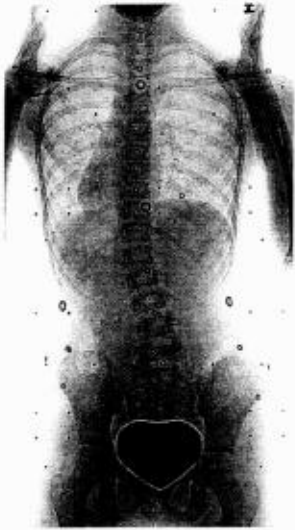
Front view with the brace:



The normalisation of the posture always appears secondarily and must not alter the type of treatment if the normalisation seems to be initially insufficient.

X-RAYS: Left Thoracolumbar Type I

Frontal view without the brace and with the shoe lift:



- The frontal x-ray taken with the left shoe lift and without the brace permits to note a moderate reduction of the Cobb angle (14°) that proves an appropriateness of the shoe lift prescription.
- The height of the shoe lift is selected clinically with the help of the postural data enabling the horizontalisation of the pelvis without a postural aggravation.

Sagittal view without the brace and with the shoe lift:

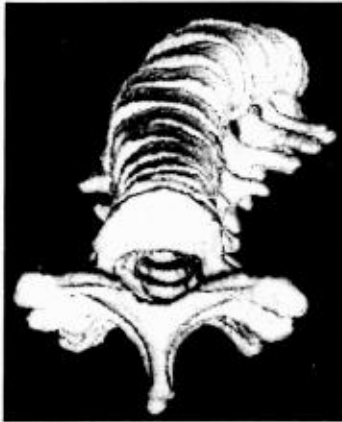


On the sagittal x-ray taken with the shoe lift and without the brace:

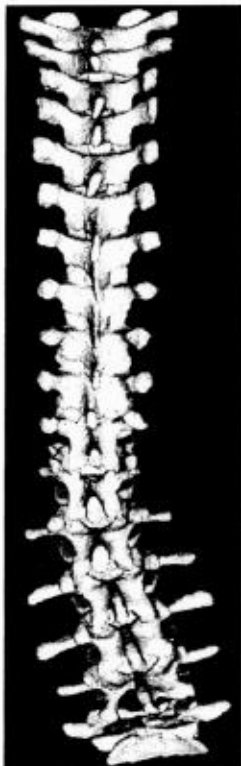
- The sagittal curves can be reduced temporarily in a balanced manner, particularly in relation to the patients' age and the reducibility of the deformation, which is acceptable.

3D RECONSTRUCTIONS: Left Thoracolumbar Type I

Apical view without the brace and with the shoe lift:



This view permits to analyse the three-dimensional modifications induced by the shoe lift (here it is 1.5 cm, under the left foot).



Frontal view without the brace and with the shoe lift:

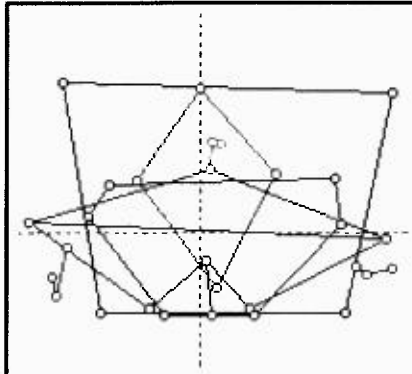
Confirms the x-ray findings.

Sagittal view without the brace and with the shoe lift:

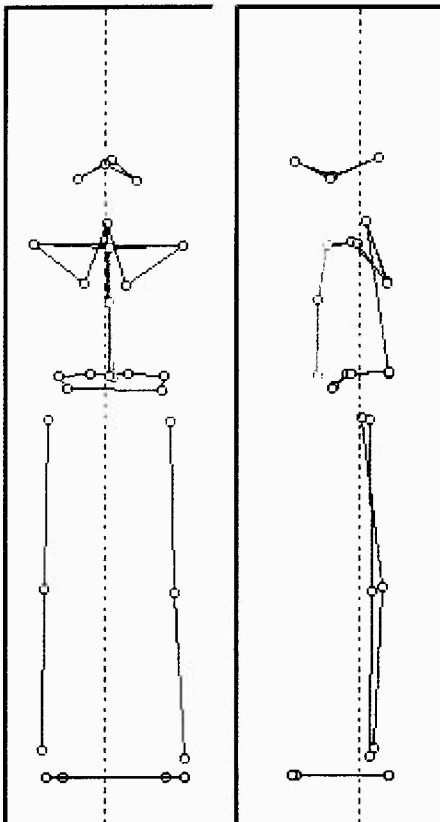
Confirms the x-ray findings.

3D POSTURES: Left Thoracolumbar Type I

Apical view with the brace and with the shoe lift:



In this plane, the posture appears more or less normalised, which is satisfying, but not mandatory and not sufficient.



Frontal view with the brace and with the shoe lift:

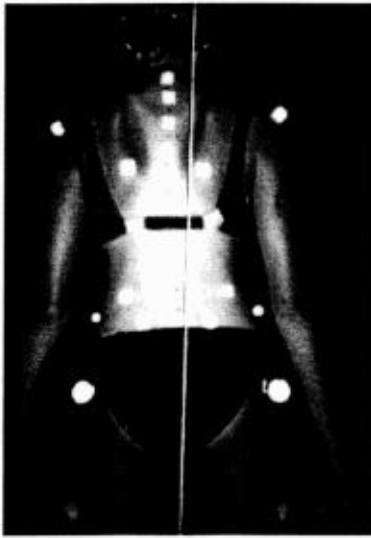
- The reduction of the tilt of the shoulders and the right shift of the shoulders and the pelvis.

Sagittal view with the brace and with the shoe lift:

The only visible modifications are at the level of the pelvis, which is re-balanced in the frontal and horizontal plane, inevitably changing its position in the sagittal plane.

STEP 2:

PHOTOS: Left Thoracolumbar Type I



Back view without the brace:

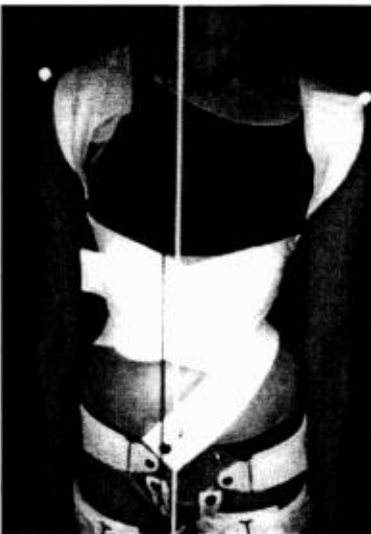
After wearing the brace and the shoe lift for a variable period of time, the posture is improved and can be maintained independently over a short period of time (a few hours or days). Since the growth is in progress, the correction is not complete and therefore can not be maintained permanently. The wearing of the brace and the shoe lift should be continued.



Back view with the brace:

Please note that the brace is fitted in the same manner as initially, the tension in the bands is adjusted without really being increased. The extent of the achieved correction is due to the increased reducibility of the curve accompanying the wearing of the brace. It is then essential to magnify the corrective movement and, therefore, exaggerate the counterclockwise tilt of the thorax in order to obtain the reduction of the curve.

The excessive postural changes are acceptable, they will normalize themselves following the cessation of the brace.

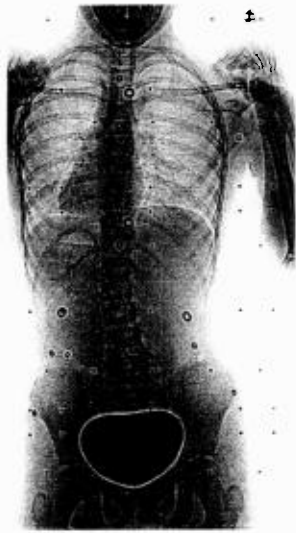


Front view with the brace:

We should not consider the postural changes to be excessive, in fact the patient does not feel any discomfort since the bands' tension is not increased and the corrective posture is actually only slightly exaggerated.

X-RAYS: Left Thoracolumbar Type I

Frontal view without the brace:



Please note that, in relation to the initial x-ray, the correction achieved with the brace and the shoe lift persists on the x-ray, but the correction is not complete and will disappear with time if the treatment ceases.

Meanwhile, please note the reduction in the apexian vertebral rotation, and that the pelvis remains tilted.

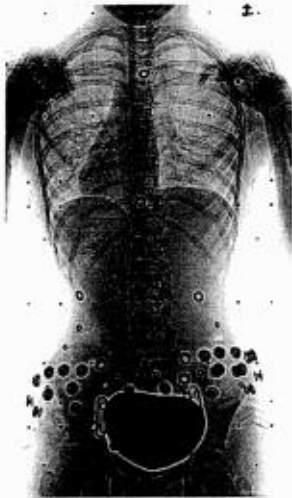
Sagittal view without the brace:



Sagittal curves are not much modified in relation to the initial x-ray but appear different because of the change in posture.

RAYS: Left Thoracolumbar Type I

Frontal view with the brace and the shoe lift:



At this stage, with brace and shoe lift, the correction of the curve is complete in terms of the Cobb angle, which is essential.

The lumbar vertebrae rotation aspect will be corrected secondarily and must not affect the fitting of the brace. Furthermore, we must not take into account the position of the pelvis.

Sagittal view with the brace and the shoe lift:



The clear changes in the sagittal curves with the brace and the shoe lift in place are acceptable and even positive.

- The retropulsion of the thorax which is partly responsible for the sagittal aspect.
- The reduction of the kyphosis does not cause any problem as long as there is no thoracic countercurve.
- The exaggeration of the lordosis enables the reduction of the curve.
- Following the cessation of the brace, these curves go back to normal without any consequences on the achieved frontal correction.

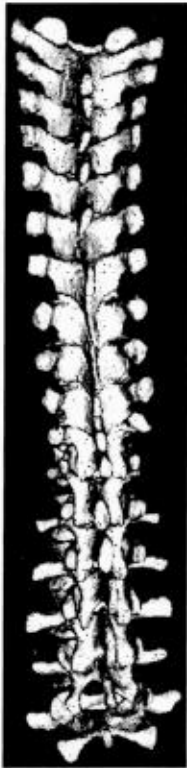
The changes required for the correction (corrective movement) must be differentiated from those in relation to the scoliotic deformation.

3D RECONSTRUCTIONS: Left Thoracolumbar Type I

Apical view with the brace:



This view permits to observe the three-dimensional aspect of the obtained reduction.



Frontal view with the brace:

Confirms the x-ray findings.

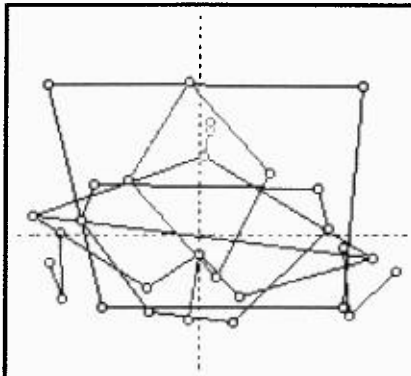


Sagittal view with the brace:

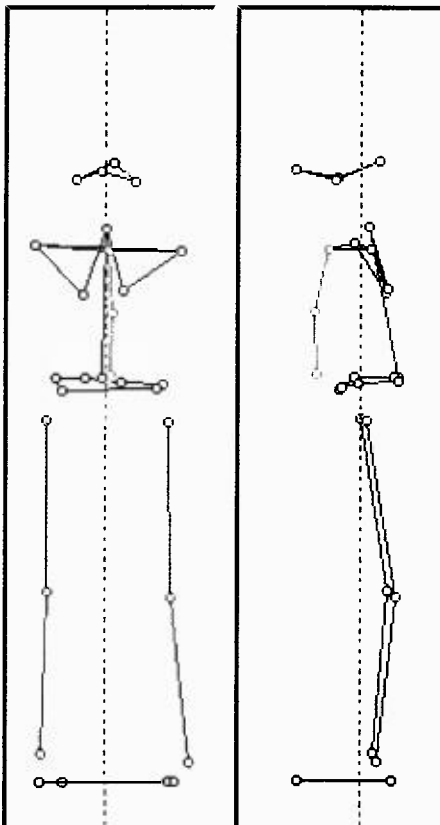
Confirms the x-ray findings.

3D POSTURES: Left Thoracolumbar Type I

Apical view with the brace and the shoe lift:



At this stage, the postural aspect with the brace and the shoe lift is similar to the one right after the brace fitting, except for an exaggeration of the traits already mentioned.



Frontal view with the brace and the shoe lift:

At this stage, the postural aspect with the brace and the shoe lift is similar to the one right after the brace fitting, except for an exaggeration of the traits already mentioned.

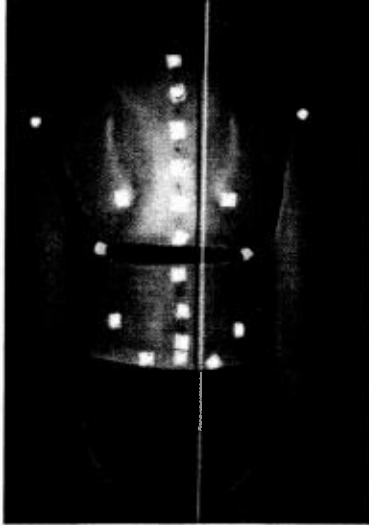
Sagittal view with the brace and the shoe lift:

At this stage, the postural aspect with the brace and the shoe lift is similar to the one right after the brace fitting, except for an exaggeration of the traits already mentioned.

STEP 3:

PHOTOS: Left Thoracolumbar Type I

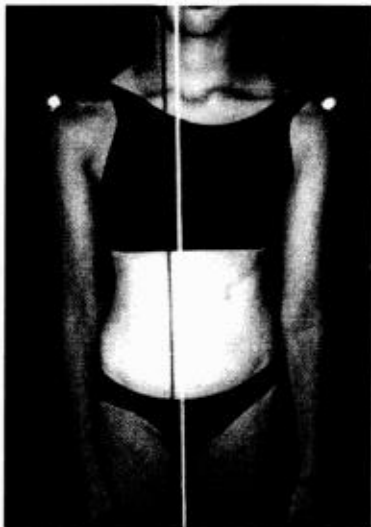
Back view without the brace:



The posture is practically normal but cannot be considered stable unless it is integrated, i.e. that the corrective movement is maintained when walking. Stability also depends on the remaining growth potential, the less it is, the greater the stability.

Generally, an exaggeration of the static correction is desired, not only the normalization.

Front view without the brace:



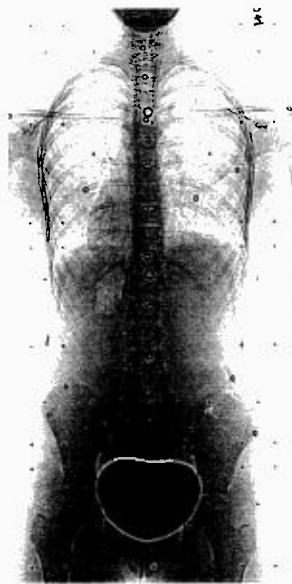
The posture is practically normal but cannot be considered stable unless it is integrated, i.e. that the corrective movement is maintained when walking. Stability also depends on the remaining growth potential, the less it is, the greater the stability.

Generally, an exaggeration of the static correction is desired, not only the normalization.

N.B. The plumbline visible on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Left Thoracolumbar Type I

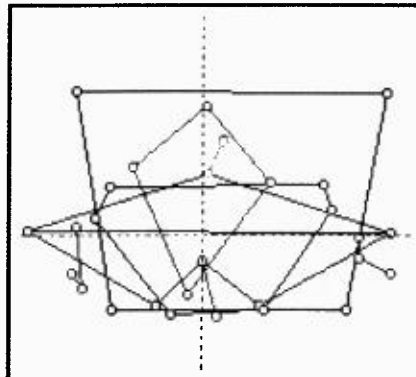
Frontal view without the brace and with the shoe lift:



- The Cobb angle is practically zero and the vertebral rotation has almost disappeared. However, this x-ray is taken with a 1.5cm corrective shoe lift on the left side and growth is far from being completed, the Risser sign is at 0.
- If, at this stage, it is decided to discontinue the brace, the shoe lift must be kept and strict follow-up maintained. Before deciding to stop or suspend the treatment, the patient must be seen after a few days without treatment.
- First and foremost, as long as the growth velocity is high (0.5 cm to 1 cm monthly upright height increase), and that the corrective movement is not integrated, it is not legitimate to stop the treatment even if the full correction is achieved. The correction may or may not be maintained.

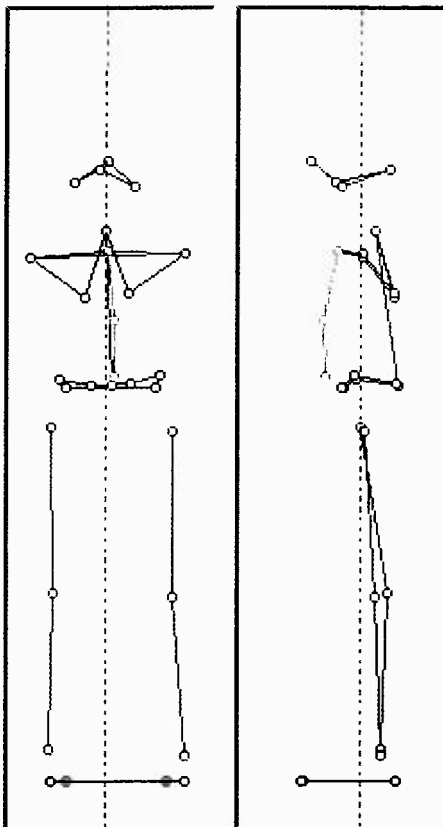
3D POSTURES: Left Thoracolumbar Type I

Apical view with the brace:



Please note that no level is disoriented. The scapular, pelvic and head levels are correctly aligned.

Persists a left shift of these three levels, which does not correspond to a particular inconvenience at this stage and probably indicates the postural instability of this patient who is still growing.



Frontal view with the brace:

- Persists the frontal counterclockwise tilt of the shoulder girdle, which is positive.

Sagittal view with the brace:

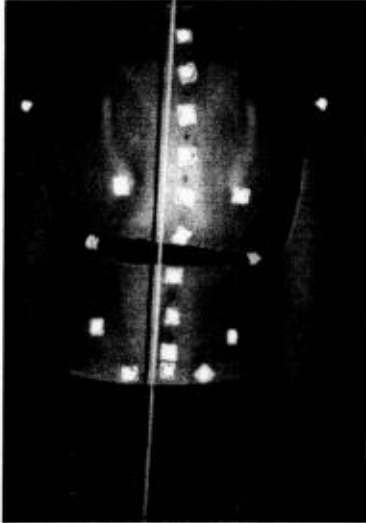
Note that the straight line between T1 and S1 does not represent the actual position of the spinous processes, since they are covered by the brace; therefore it does not have any clinical significance.

Please note that the anterior projection of the trunk is simply in relation to a correction of the genu recurvatum of this patient and, therefore, does not correspond to an anomaly.

STEP 4:

PHOTOS: Left Thoracolumbar Type I

Back view without the brace:



The treatment with the dynamic corrective brace enables us to seek a hypercorrection in some cases. That is what has been done here and the corresponding result indicates an exaggeration of the postural correction.

This exaggeration is probably desirable in order to enable the perpetuation of the result.

X-RAYS: Left Thoracolumbar Type I

Frontal view with the brace:



The brace has been fitted in the position of hypercorrection and has induced a very slight right thoracic curve which will disappear immediately after the brace discontinuation.

Sagittal view with the brace:



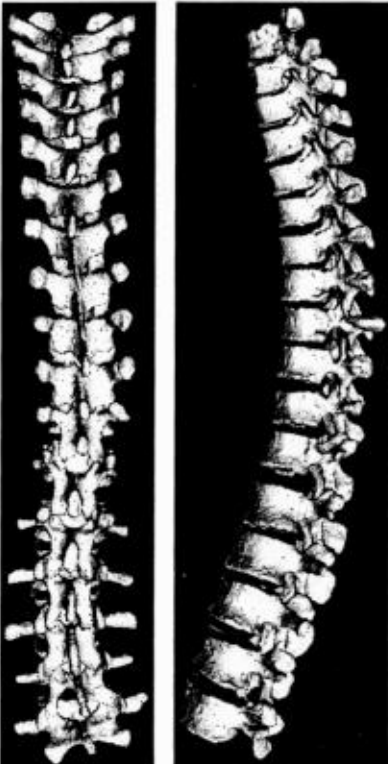
The sagittal curves have progressively returned to the normal range and will be maintained there.

3D RECONSTRUCTIONS: Left Thoracolumbar Type I

Apical view with the brace:



This view permits to affirm the three-dimensional character of the obtained correction.



Frontal view with the brace:

Confirms the x-ray findings.

Sagittal view with the brace:

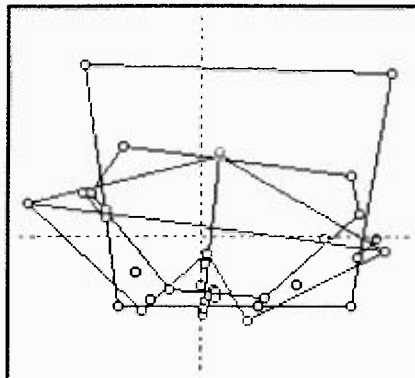
Confirms the x-ray findings.

The lordosis seems to be diminished due to two reasons:

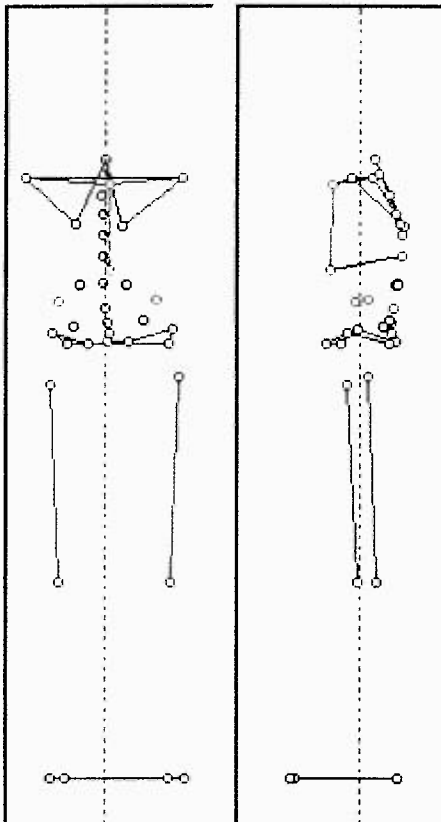
- It is incomplete: the disk L5-S1 and S1 are not represented in the graph.
- The growth of the anterior structures of the lumbar vertebrae is not completed.

3D POSTURES: Left Thoracolumbar Type I

Apical view without the brace and without the shoe lift:



- The three levels, e.g. head, shoulders, pelvis, are in a clockwise rotation, but are correctly superimposed and oriented which was not the case at the beginning.
- A left shift of the three levels persists due to the absence of a corrective shoe lift in this case. It is probably legitimate to maintain the wearing of this shoe lift during the growth period in order to avoid any postural degradation. This is knowing that in most cases, the pelvis becomes balanced at the end of growth and the shoe lift is no longer necessary.



Frontal view without the brace and without the shoe lift:

Please note that the posture is not perfectly corrected in this plane even if it appears clinically effective. This indicates that the correction is not perfect and the wearing of the shoe lift which corrects this aspect should, at the least, be maintained.

Sagittal view without the brace and without the shoe lift:

There is no anomaly in this plane except a slight bilateral genu recurvatum previously present and for which no treatment has been induced so far.

LEFT THORACOLUMBAR TYPE II (LTL2)

STEP 1

PHOTOS: Left Thoracolumbar Type II

Back view with the brace (first fitting):



- Apart from a very moderate translation of the trunk to the right, the posture must not be modified too significantly. It is however necessary to make sure that, in the horizontal plane, the shoulder girdle remains in clockwise rotation or is neutral, but must never be in a counterclockwise rotation.
- In the same manner, the shoulder girdle tilt must not be modified excessively.

Please note that there are two different fittings.

Front view with the brace (first fitting):



Generally, the only visible modification is a slight shift to the right and/or a very moderate counterclockwise inclination of the trunk.

Please note that there are two different fittings.

PHOTOS: Left Thoracolumbar Type II

Back view with the brace (second fitting):



- Apart from a very moderate translation of the trunk to the right, the posture must not be modified too significantly. It is however necessary to make sure that, in the horizontal plane, the shoulder girdle remains in clockwise rotation or is neutral, but must never be in a counterclockwise rotation.
- In the same manner, the shoulder girdle tilt must not be modified excessively.

Please note that there are two different fittings.

Front view with the brace (second fitting):

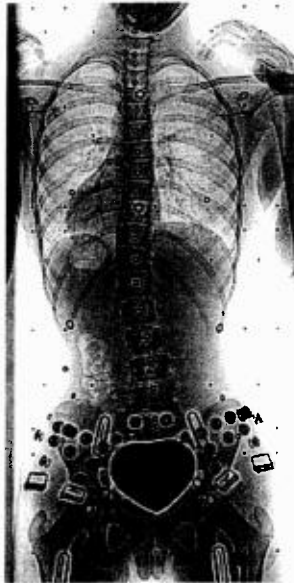


Generally, the only visible modification is a slight shift to the right and/or a very moderate counterclockwise inclination of the trunk.

Please note that there are two different fittings.

X-RAYS: Left Thoracolumbar Type II

Frontal view with the brace:



- The main objective is a reduction of the Cobb angle (16°) of the left thoracolumbar curve, and particularly to a progressive horizontalization of the vertebrae at the lower limit of this curve.
- Firstly, we can pay less attention to the overlying right thoracic countercurve.

Sagittal view with the brace:



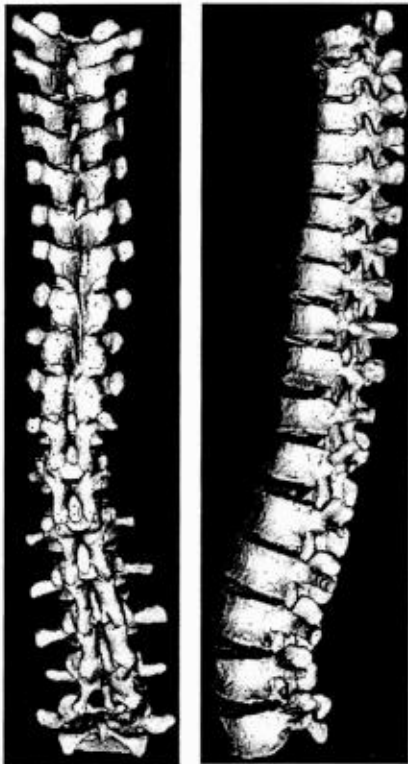
- In this type of scoliosis, the sagittal curves are never very pronounced and therefore, very slightly modified by the brace. However, it is interesting to note a progressive reduction of the junctional kyphosis.
- At the beginning, at least, it is not necessary to try to increase the thoracic kyphosis.

3D RECONSTRUCTIONS: Left Thoracolumbar Type II

Apical view with the brace:



This view permits to observe the three-dimensional aspect of the obtained reduction.



Frontal view with the brace:

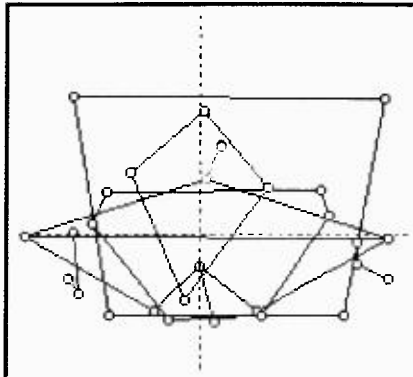
Confirms the x-ray findings.

Sagittal view with the brace:

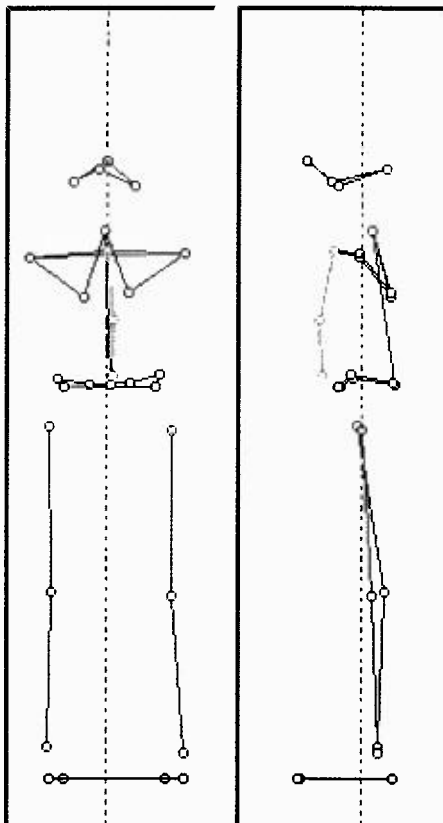
Confirms the x-ray findings.

3D POSTURES: Left Thoracolumbar Type II

Apical view with the brace:



At this stage, the only real visible modification in this plane concerns the shoulder girdle whose rotation can remain slightly clockwise or neutral, but first and foremost, it should not be counterclockwise.



Frontal view with the brace:

Little or no modification to be expected in this plane.

Sagittal view with the brace:

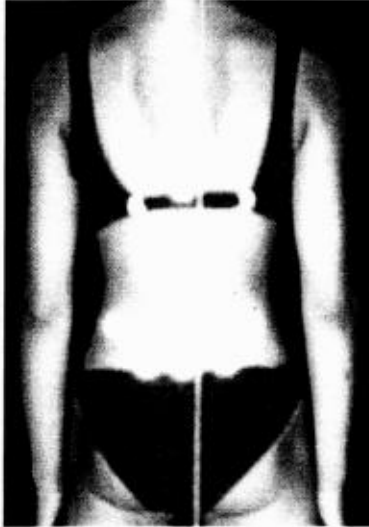
Little or no modification to be expected in this plane.

Note that the straight line between T1 and S1 does not represent the actual position of the spinous processes, since they are covered by the brace; therefore it does not have any clinical significance.

STEP 2

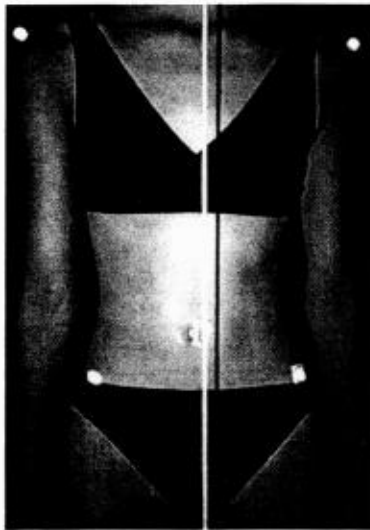
PHOTOS: Left Thoracolumbar Type II

Back view without the brace:



After a variable time of a compliant wearing of the brace, it is possible to note a normalization of the posture in relation to the reduction of the curve.

Front view without the brace:

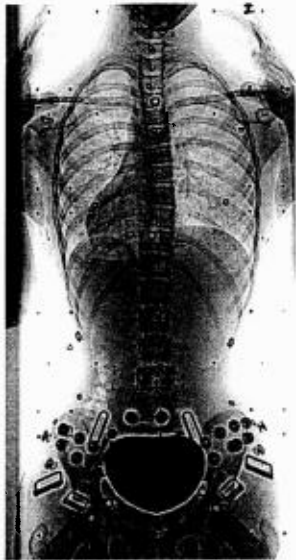


After a variable time of a compliant wearing of the brace, it is possible to note a normalization of the posture in relation to the reduction of the thoracolumbar curve.

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Left Thoracolumbar Type II

Frontal view with the brace:



- Please note the significant reduction of the Cobb angle (4°) of the thoracolumbar curve and especially, the horizontalization of the lower limit vertebrae of this curve, which is very important.
- The thoracic countercurve is slightly or not modified.

Sagittal view with the brace:



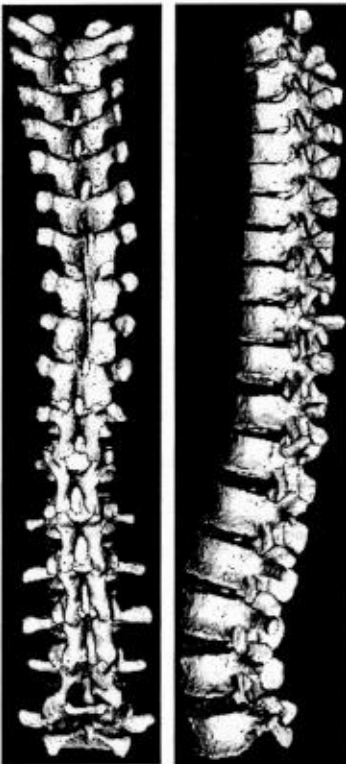
- Please note that the junctional kyphosis has practically disappeared.
- The curves remain slightly pronounced but kyphosis and lordosis are approximately balanced.
- The fact that the sagittal curves are slightly pronounced is in relation with the type of scoliosis and also with the patient's age, 11 years, when they are usually immature.

3D RECONSTRUCTIONS: Left Thoracolumbar Type II

Apical view with the brace:



This view permits to observe the three-dimensional aspect of the obtained reduction.



Frontal view with the brace:

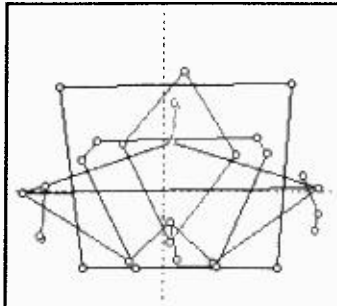
Confirms the x-ray findings.

Sagittal view with the brace:

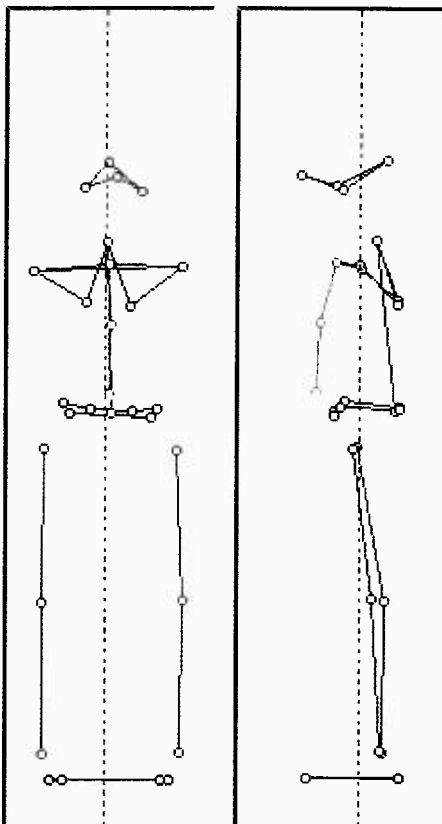
Confirms the x-ray findings.

3D POSTURES: Left Thoracolumbar Type II

Apical view with the brace:



Either with the brace or without it, the posture is practically normal at this stage because of the reduction of the thoracolumbar curve.



Frontal view with the brace:

Either with the brace or without it, the posture is practically normal at this stage because of the reduction of the thoracolumbar curve.

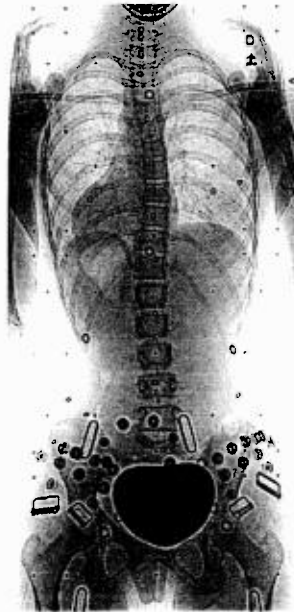
Sagittal view with the brace:

Since the spinous processes are covered by the brace, the straight line between T1 and S1 does not represent their true position. Therefore this line has no clinical significance.

STEP 3

X-RAYS: Left Thoracolumbar Type II

Frontal view with the brace:



- The reduction of the thoracolumbar curve is less significant than in the previous step. It is an aspect frequently observed throughout the follow-up, corresponding to significant growth spurts or right after them. During these periods, it is more difficult to maintain the previously obtained corrections. But generally, when the growth spurt is completed, it is possible to obtain the reduction again and even optimize the result.
- Please note that the thoracic curve remains stable.

Sagittal view with the brace:



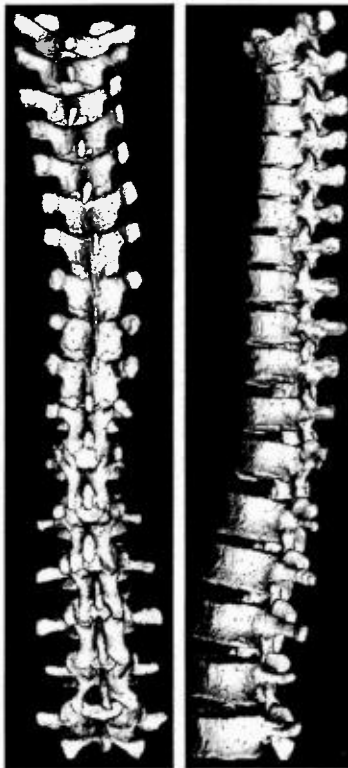
The sagittal curves are slightly modified. Meanwhile, please note, a very slight modification of the thoracolumbar junction in relation to a discreet loss of reduction of the curve in the frontal plane and to the growth spurt in progress.

3D RECONSTRUCTIONS: Left Thoracolumbar Type II

Apical view with the brace:



Note a discreet accentuation of the thoracic curve that can explain the loss in the reduction of the thoracolumbar curve visible on the x-ray.



Frontal view with the brace:

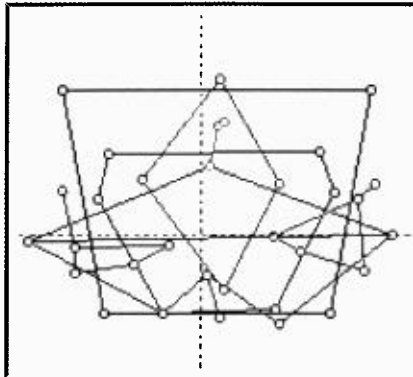
Confirms the x-ray findings.

Sagittal view with the brace:

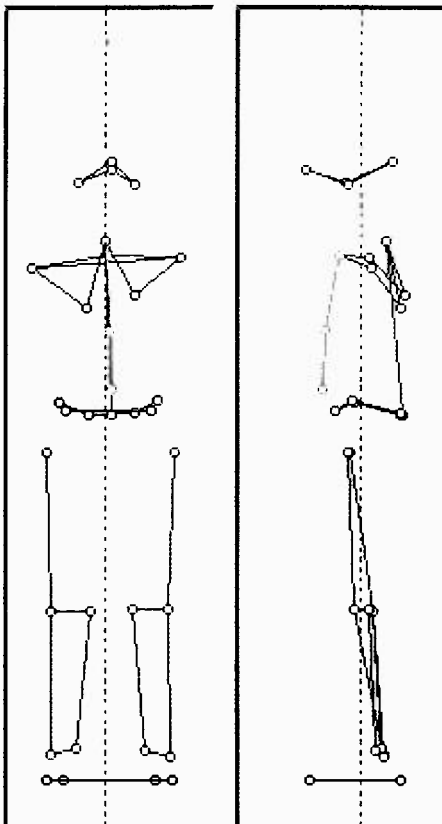
Confirms the x-ray findings.

3D POSTURES: Left Thoracolumbar Type II

Apical view with the brace:



In this plane, the posture remains practically normal.



Frontal view with the brace:

There are little modifications to note apart from a discreet counterclockwise tilt of the shoulder girdle.

Sagittal view with the brace:

No modification in this plane in relation to the previous step.

STEP 4

PHOTOS: Left Thoracolumbar Type II

Back view without the brace:



The posture is normal.

Front view without the brace:



The posture is normal.

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Left Thoracolumbar Type II

Frontal view with the brace:



- The first growth spurt of the spinal column, which follows an initially obtained good correction of the curve, generally enables an optimization of this correction as noted on this x-ray. The curves in the frontal plane are almost completely reduced.
- Please note that the tension in the bands has been very slightly or not increased throughout the follow-up. The bands are simply readjusted when they become too loose or too tight.
- A better mobility obtained with time can enable hypercorrections, particularly visible on postural controls, without a discomfort for the patient.

Sagittal view with the brace:



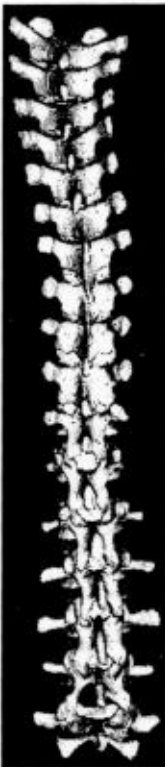
Please note that the kyphosis and lordosis remain at the lower limit of the norm, but are balanced; there is no junctional kyphosis.

3D RECONSTRUCTIONS: Left Thoracolumbar Type II

Apical view with the brace:



This view permits to observe the three-dimensional aspect of the obtained reduction.



Frontal view with the brace:

Confirms the x-ray findings.

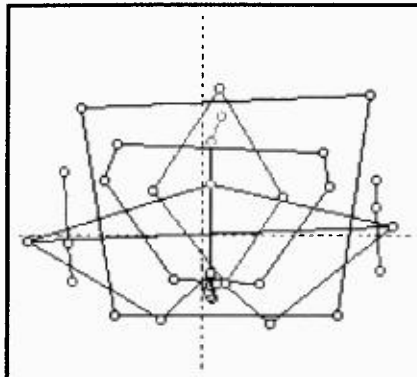
Sagittal view with the brace:

Confirms the x-ray findings.

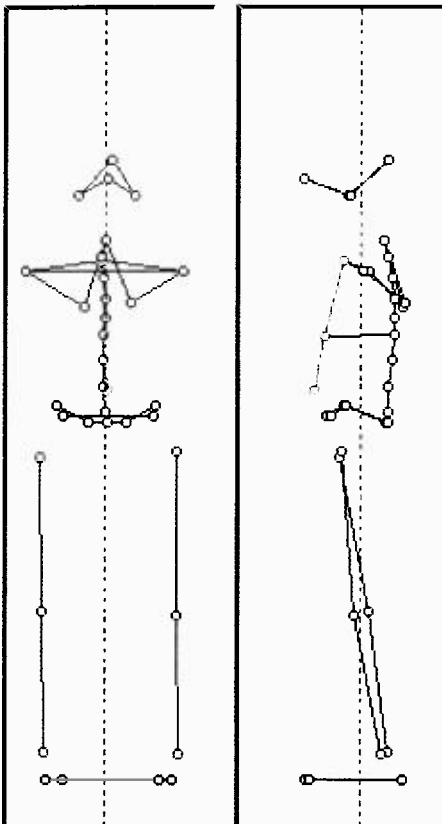
The marked hypokyphosis prompts to a close watch on the thoracic curve.

3D POSTURES: Left Thoracolumbar Type II

Apical view without the brace:



- Please note the quasi-normalization of the posture in the apical view.
- There persist only a very slight clockwise pelvic rotation and a very slight counterclockwise rotation of the shoulder girdle.



Frontal view without the brace:

No detectable postural anomaly in this plane.

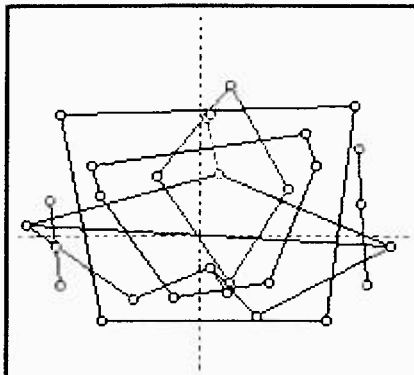
Sagittal view without the brace:

- Please note particularly a clear retroversion of the pelvis, probably in relation to the postural immaturity of this young patient.

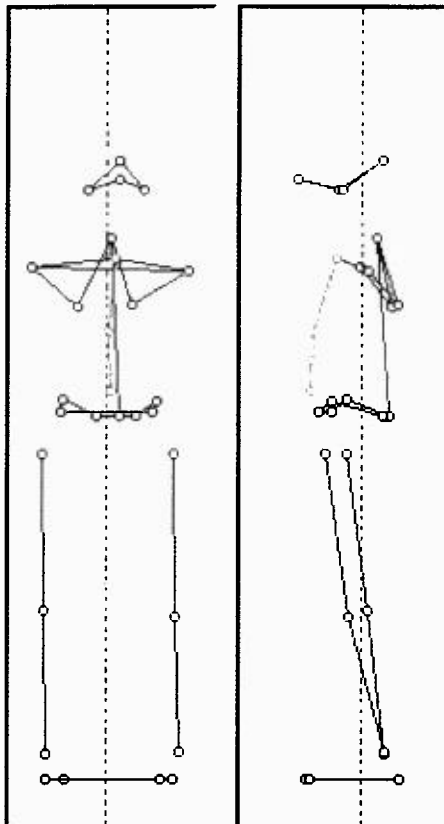
N.B. Even if the posture has returned to normal, or almost normal, as long as growth is not completed, the result cannot be considered as being definitively achieved. Should the practitioner decide to stop the brace, it is advised to keep a close watch. It always seems preferable to proceed with a progressive weaning of the brace rather than an abrupt one.

3D POSTURES: Left Thoracolumbar Type II

Apical view with the brace:



When the reduction of the curves and the mobility of the spinal column enable it, a hypercorrection is desired and is represented here particularly by a counterclockwise pelvic rotation. This aspect is acceptable since it is always temporary and disappears with the cessation of the brace.



Frontal view with the brace:

Please note that there is no significant postural anomaly in this plane, apart from the unusual aspect of the pelvis linked to the rotation, which is more obvious in the apical plane.

Sagittal view with the brace:

Please note that there is no significant postural anomaly in this plane, apart from the unusual aspect of the pelvis linked to the rotation, which is more obvious in the apical plane.

LEFT LUMBAR (LL)

STEP 1

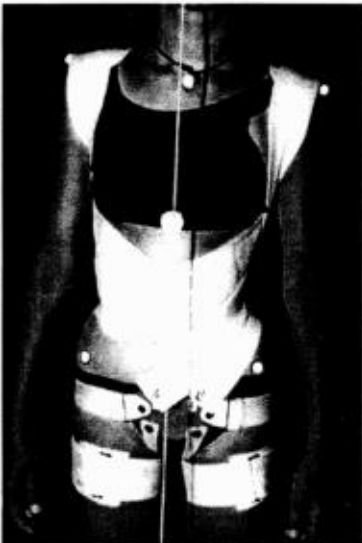
PHOTOS: Left Lumbar

Back view with the brace:



- Inversion of the asymmetry of the waist angle compared to the same view without brace, in relation to the effect of the translation.
- The lateral inclination to the left of the thorax and shoulders, which is actually greater than it appears due to the effect of the translation.
- The prominence with brace should never be greater than the prominence without brace. Normally, the prominence will diminish progressively with time.
- Once the brace has been applied, it feels unusual due to the changes in posture, but not uncomfortable. The tension of the bands must always remain acceptable, being designed to induce the corrective movement, not to force it.

Front view with the brace:



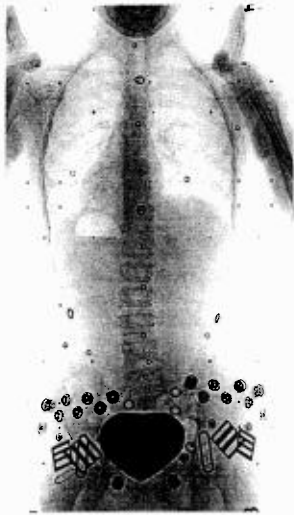
Please note:

- The positive alignment of the trunk in relation to the pelvis.
- Inversion of the asymmetry of the waist angle compared to the same view without brace, in relation to the effect of the translation.

N.B.: The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Left Lumbar

Frontal view with the brace:



- This x-ray with the brace verifies the initial effectiveness of the brace.
- The extent of the obtained reduction depends on:
 - The adequacy of the fitting.
 - The flexibility of the curve.
 - The patient's maturity.
- The initial reduction is judged qualitatively rather than quantitatively because it is almost never maximal.
- The Cobb angle measured in this case at 9° corresponds to a reduction of over 50% and indicates a flexible curve in an immature patient.

Sagittal view with the brace:



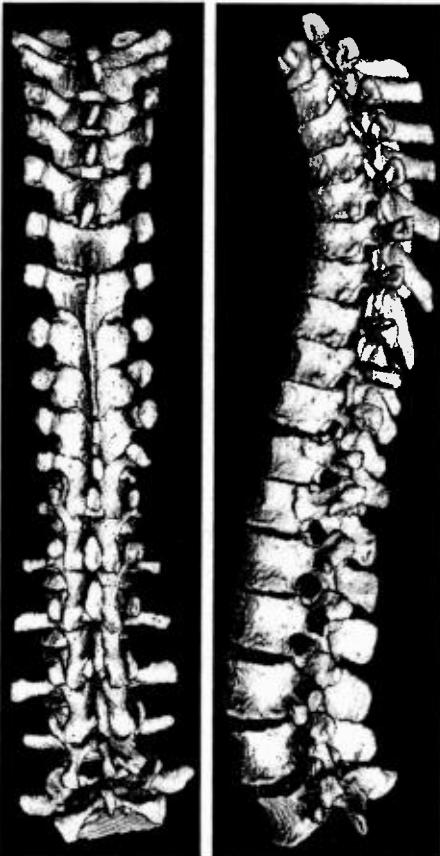
- The absence of obvious changes of the initial curves.
- The moderate anterior projection of the trunk, a common finding with no consequences.

3D RECONSTRUCTIONS: Left Lumbar

Apical view with the brace:



This view permits to confirm that the reduction observed on the x-ray is real and not simply due to a change of the plane of the curve.



Frontal view with the brace:

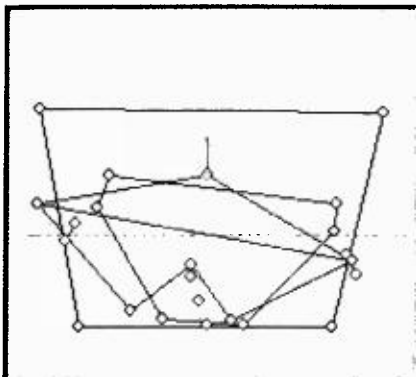
Reliably reproduces the x-ray aspect.

Sagittal view with the brace:

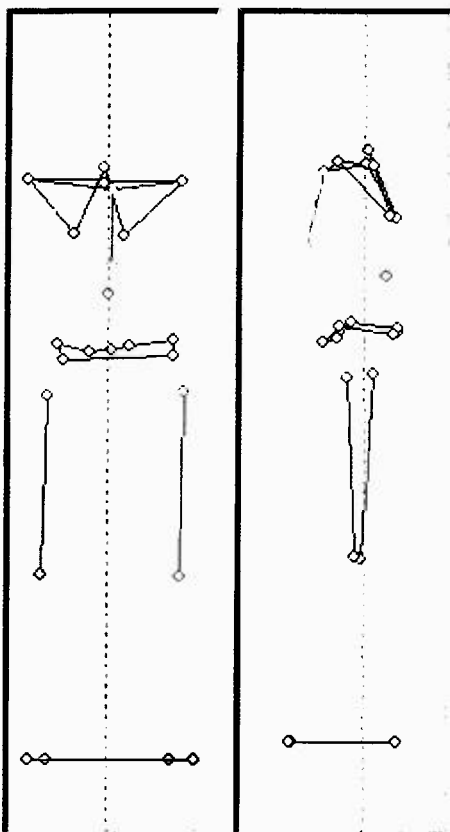
Reliably reproduces the x-ray aspect.

3D POSTURES: Left Lumbar

Apical view with the brace:



- The posture reveals a clockwise rotational reaction of the trunk and pelvis with no consequences on the spine. This is probably related to an initial modification in the equilibrium strategy of the patient.
- This aspect is acceptable.



Frontal view with the brace:

- The reduction of the Cobb angle is not obvious because of an uncorrected moderate pelvic tilt.

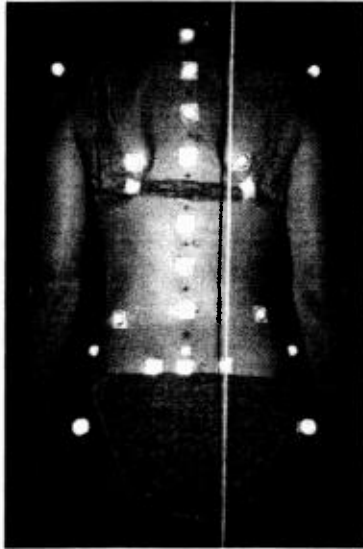
Sagittal view with the brace:

- The posture reveals the anterior projection of the trunk suspected on the x-ray.
- Note that the straight line between T1 and S1 does not represent the actual position of the spinous processes, since they are covered by the brace; therefore it does not have any clinical significance.

STEP 2

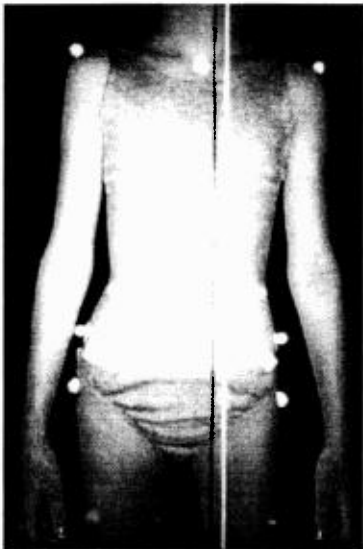
PHOTOS: Left Lumbar

Back view without the brace:



- Despite an appreciable x-ray correction with the brace, the posture without brace has changed little comparing with the initial posture.
- Moreover, the patient tends to shift her body weight onto the left lower extremity.
- As long as the postural correction is not maintained without the brace, even if the reduction appears significant on the x-ray, the brace wearing cannot be stopped without a risk of progressive return to the initial Cobb angle.

Front view without the brace:



Confirms the clinical findings on the back view photo.

Note: The prominence measured without brace has changed from 7° to 4°.

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Left Lumbar

Frontal view with the brace and 1cm shoe lift under the left foot:



- The corrective movement is exaggerated and the pelvic tilt is artificially corrected by a 1 cm shoe lift under the left foot.
- The Cobb angle is measured at 2°.
- The convex rotational aspect of the vertebrae at the apex visible here should not be a concern and will normally self-correct progressively. This appearance is due in part to the slightly oblique incidence of the x-ray and in part to the horizontal deformation of these vertebrae that only appears in these small curves when the Cobb angle is sufficiently reduced.

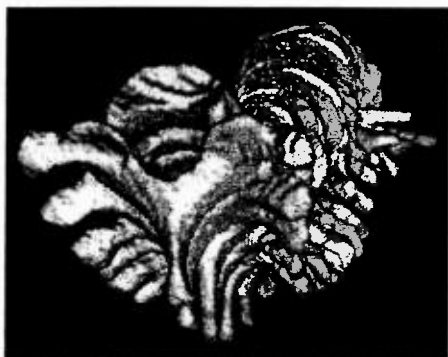
Sagittal view with the brace and 1cm shoe lift under the left foot:



Sagittal curvatures normal for the age.

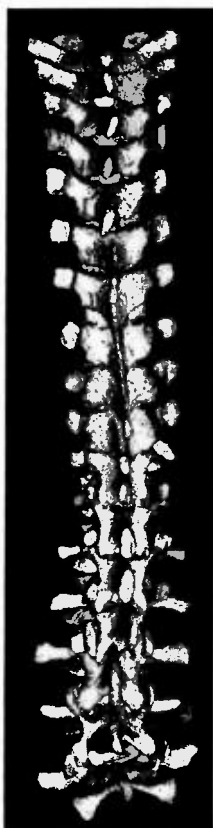
3D RECONSTRUCTIONS: Left Lumbar

Apical view with the brace and 1cm shoe lift under the left foot:



This view permits to:

- Specify the x-ray observations.
- Confirm the observed reduction of the Cobb angle.



Frontal view with the brace and 1cm shoe lift under the left foot:

This view permits to:

- Specify the x-ray observations.
- Confirm the observed reduction of the Cobb angle.

Sagittal view with the brace and 1cm shoe lift under the left foot:

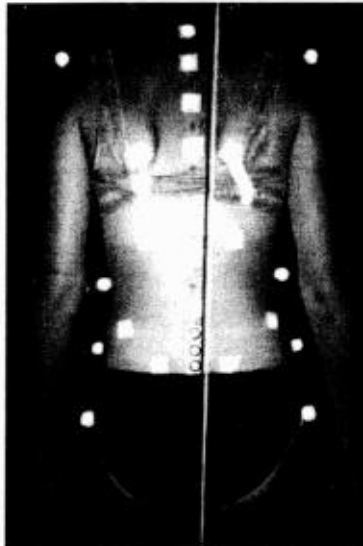
This view permits to:

- Specify the x-ray observations.
- Confirm the observed reduction of the Cobb angle.

STEP 3

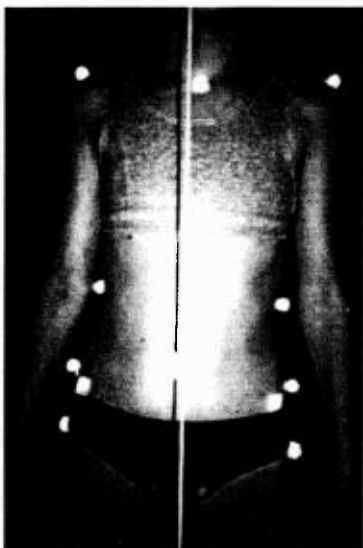
PHOTOS: Left Lumbar

Back view without the brace:



- The posture is starting to normalise and to be maintained without the brace and the shoe lift.
- However, stopping the bracing treatment cannot be considered unless :
 - The postural correction is durable without the brace.
 - The height is close to the expected statistical height.
 - The growth rate stays below 3 mm per month for several consecutive months.

Front view without the brace:



Confirms the observations on the back view photo.

Note: Postural disorganisation often precedes the x-ray curve and disappears several months after the latter.

N.B. The plumbline shown on the photo is suspended from the ceiling and falls exactly to the middle of the foot template, midway between the patient's heels.

X-RAYS: Left Lumbar

Frontal view with the brace and 1cm shoe lift under the left foot:



- The complete reduction of the lumbar curve with a tendency to a desired hypercorrection.
- The horizontalisation of L4.
- The slight concave opening of intervertebral disks L2-L3 and L3-L4.
- The almost total disappearance of the rotational aspect of the vertebrae at the apex.

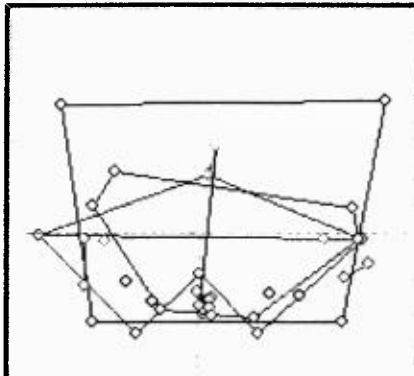
Sagittal view with the brace and 1cm shoe lift under the left foot:



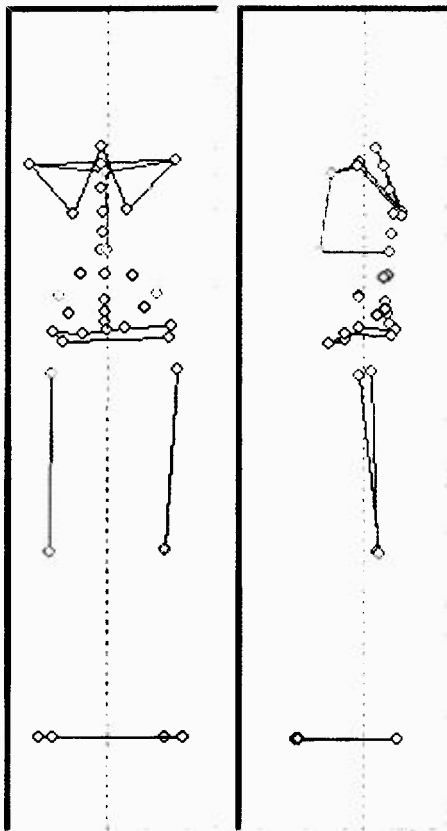
No notable modification in this plane.

3D POSTURES: Left Lumbar

Apical view without the brace and without the shoe lift:



- There persists a slight clockwise rotation of the pelvis, which was initially present in this plane. This rotation could constitute a slight residual anomaly unless it self-corrects progressively as the treatment continues.
- The shifted aspect of the shoulders in relation to the pelvis is related to the first point.



Frontal view without the brace and without the shoe lift:

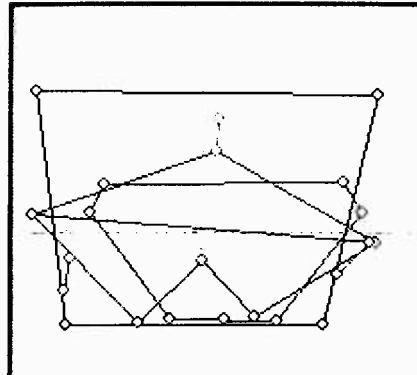
- Frontal view without the brace and without the shoe lift.

Sagittal view without the brace and without the shoe lift:

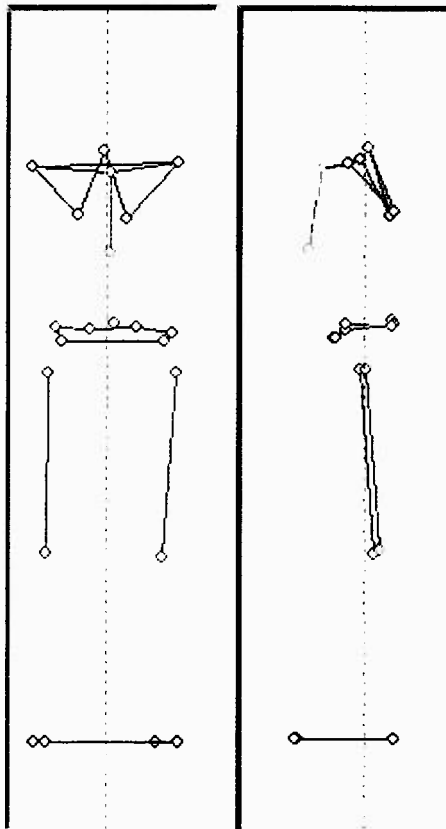
- Note the persisting normal aspect of the posture in this plane.

3D POSTURES: Left Lumbar

Apical view with the brace and 1cm shoe lift under the left foot:



- The shoulders have been centred over the pelvis by slightly altering the tension of the two shoulder bands and thus enabling a simultaneous derotation.



Frontal view with the brace and 1cm shoe lift under the left foot:

- The small anomalies observed in this plane are related to the exaggeration of the desired postural correction.

Sagittal view with the brace and 1cm shoe lift under the left foot:

No notable modification other than a moderate anterior projection of the trunk, which is acceptable.