The Postural Reactions Test;
Four postural reactions to be assessed and scored separately or together

1. Equilibrium reaction: compensatory movement in arm and leg

Starting position: The patient sits on a bed or examining table with hands in the lap and the feet supported or unsupported. Leg crossing is not allowed.

The test leader holds the shoulders of the patient and leans the patient to the side. Alternatively, the patient leans themselves to the side. If no equilibrium reaction is observed, the test leader instructs the patient to return to an upright position and provides some resistance to this movement. Equilibrium reactions are observed as a movement of the opposite side arm and/or leg. If the test leader is uncertain whether there is a reaction, a score of 0 is given.

The patient might need to be informed that the test leader wants to see how well they can adjust to leaning. This can be clarified by instructing the patient that arm and leg movements are allowed if needed for balance, but they are not allowed to hold on with their hands.

Leaning to the right (please tick ONE box in this column)	**Leaning to the left (please tick ONE box in this column)**
(0) ☐ No reaction or uncertain equilibrium reaction in the left arm or the left leg	(0) ☐ No reaction or uncertain equilibrium reaction in the right arm or the right leg
(1) ☐ Equilibrium reaction is present in the left arm and/or the left leg	(1) ☐ Equilibrium reaction is present in the right arm and/or the right leg

The patient was:	☐ brought into the position	☐ leaning by themselves
The tests were performed:	☐ on a bed	☐ on an examining table
The feet were:	☐ supported	☐ unsupported

If equilibrium reactions are observed both to the right and the left, any side differences should be noted below. If an equilibrium reaction is observed explicitly in the arm or leg, this should also be noted below.

Comments:

2. Righting reaction: striving to orient the eyes in a horizontal line

Starting position: The patient sits on a bed or examining table with hands in the lap and feet supported or unsupported. Leg crossing is not allowed.

The test leader holds the patient's shoulders and leans them to the side. Alternatively, the patient leans themselves to the side. If no righting reaction is observed, the test leader instructs the patient to return to an upright position and provides some resistance to this movement. Righting reactions are observed as a movement of the head to the opposite side. While assessing this, it might be useful to note if the angle between the head and the shoulder changes during the righting reaction. If the test leader is uncertain whether there is a reaction, a score of 0 is given.

The patient might need to be informed that the test leader wants to see how well the patient can adjust to the leaning. This can be clarified by instructing the patient that arm and leg movements are allowed if needed for balance, but they are not allowed to hold on with their hands.

Leaning to the right (please tick ONE box in this column)	**Leaning to the left (please tick ONE box in this column)**
(0) ☐ No reaction or uncertain righting reaction	(0) ☐ No reaction or uncertain righting reaction
(1) ☐ Righting reaction is present	(1) ☐ Righting reaction is present

The patient was:	☐ brought into the position	☐ leaning by themselves
The tests were performed:	☐ on a bed	☐ on an examining table
The feet were:	☐ supported	☐ unsupported

If righting reactions are observed both to the right and the left, side differences are noted below.

Comments:

3. Protective reaction while sitting: preventing a fall by putting out the hand

Starting position: The patient sits on a bed or examining table with hands in the lap and feet supported or unsupported. Crossing the legs is not allowed.

The test leader gives the patient a hard push to the side while standing behind the patient. The push must move the center of gravity outside the support area of the patient. Protective reactions are observed in the arm on the side toward which the patient is pushed. If no active reaction is observed in the shoulder or arm, a score of 0 is given. If gravity makes the arm of the patient reach out, and thereby receive support of the elbow, arm or hand, score 0 is still given. If the test leader is uncertain whether there is a reaction, a score of 0 is given.

The patient might need to be informed that the test leader wants to see if they can put out their hands when being pushed. The patient might need to be instructed to relax their trunk so that the protective reaction can be triggered. If the patient is so tense that no reaction is triggered or a reaction is remarkably delayed, the test is to be repeated.

Push to the right (please tick ONE box in this column)	**Push to the left (please tick ONE box in this column)**	**Clarification**
(0) ☐ No protective reaction	(0) ☐ No protective reaction	No active reaction of the shoulder or arm to prevent a fall is observed
(1) ☐ Impaired protective reaction	(1) ☐ Impaired protective reaction	A slow movement to prevent a fall by putting out the hand or more than the hand is observed (balance might not be regained)
(2) ☐ Well-functioning protective reaction	(2) ☐ Well-functioning protective reaction	A fast movement to prevent a fall by putting out only the hand is observed and balance is regained by doing so

The tests were performed: ☐ on a bed ☐ on an examining table
The feet were: ☐ supported ☐ unsupported

Comments:

4. Protective reaction while standing: preventing a fall by taking one or more steps

Starting position: Protective reactions while standing are more easily triggered if the patient is standing with the feet as close together as possible.

The test leader gives the patient a push to the side hard enough to move the center of gravity outside the patient´s support area. Protective reactions are observed in the legs. If the test leader is uncertain whether there is a reaction, score 0 is given. If the patient has a tendency to fall to the side, it is not always necessary to push to observe if there is a reaction.

The patient might need to be informed that the test leader wants to see how they adjust to a push by moving the feet. It is important that the test leader(s) and/or assistants are prepared to prevent the patient from falling. The test leader(s) must be observant not to act too quickly so that they can assess if the patient was able to regain balance by taking a step.

Push to the right (please tick ONE box in this column)	**Push to the left (please tick ONE box in this column)**	**Clarification**
(0) ☐ No protective reaction	(0) ☐ No protective reaction	Does not take any steps with either leg before the test leader has to catch the subject to prevent a fall
(1) ☐ Impaired protective reaction	(1) ☐ Impaired protective reaction	Takes more than one step to regain balance or takes only one step but does not regain balance, so that the test leader has to catch the subject to prevent a fall
(2) ☐ Well-functioning protective reaction	(2) ☐ Wellfunctioning protective reaction	Takes one step with the right or left leg and successfully regains balance

Comments:

Date: Subject:

Sjöholm H, Hägg S, Nyberg L, Kammerlind AS. Reliability of test procedures for postural reactions in people with acute stroke. Int J Ther Rehabil. 2018;25(11):576. doi.org/10.12968/ijtr.2018.25.11.576

Equilibrium and righting reaction

Starting position

Leaning to the side (eg: to the right)

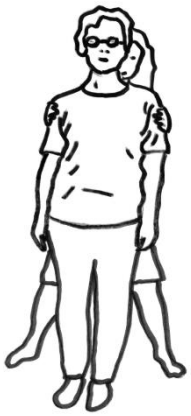
Protective reaction while sitting

Starting position

Push to the side (eg: to the right)

Protective reaction while standing

Starting position



Push to the side (eg: to the right)