

# Risk Assessment for RAPEX

## General Information

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### Product

Product name: High Chair

Product category: Child care article

Description: This is a PROSAFE risk assessment template for high chairs. It describes likely injury scenarios for the most common and risky non-compliances for high chairs according to EN 14988-1:2006+A1:2012 and EN 14988-2:2006+A1:2012

The scenario considers the following non-compliances according to EN 14988-1:

§5.2 Holes, gaps and openings;

§5.3 Moving parts;

§5.4 Locking mechanism;

§5.5 Small parts;

§5.6 Restraint system;

§5.11 Castors and wheels;

§6 Stability

### How to use

Users should select those scenarios that correspond to the non-compliances identified in the product under assessment.

All other scenarios are deleted.

The probabilities are estimated in the remaining scenarios.

Users are reminded that the scenarios presented in the template are likely scenarios. Users should always assure that the scenarios do indeed give a good representation of the situation that is being assessed. This includes among other things checking that the scenario is suitable, that the steps are correct and that the injury level is appropriate.

### Disclaimer

The template has been developed by a PROSAFE working group composed of market surveillance experts. The intention is to support market surveillance officials assessing the risk with a particular product as part of a market surveillance case.

The template is not authorized or endorsed in any way and it is not binding for Member State market surveillance authorities.

The contents of the original template is subject to change without notice.

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## **Product risks - Overview**

Scenario 1 : **Risk to be determined** - §5.2 Holes, gaps or openings.

There is a finger-size hole in the table at front of the high chair. A child puts its finger into the hole. The finger gets trapped. The finger breaks.

Scenario 2 : **Risk to be determined** - §5.3 Moving parts.

The high chair has a foldable table.

A child is sitting in the high chair. The child plays with the table. A finger gets entrapped between the table and the arm rest. The finger is crushed.

Scenario 3 : **Risk to be determined** - §5.4 Locking mechanism.

A child is sitting in the folding chair. The locking mechanism breaks or is inadequately engaged. The chair folds unintentionally. The chair tilts. The child bangs its head into the floor. The child suffers concussion.

Scenario 4 : **Risk to be determined** - §5.5 Small parts, e.g. small parts from toys fixed to the table of the high chair.

A child is sitting in a high chair, playing with the toys fixed to the table. The child is unattended or the carer is doing household activities. The child picks up a detached small part from the toy. The child puts the part into the mouth. The part gets stuck in the larynx and blocks the airways.

Scenario 5 : **Risk to be determined** - §5.6 Restraint system

A high chair is equipped with an inadequate or weak restraint system. The child is excited and is pushing against the table. The high chair tips over. The child hits the floor with the head/neck. The child suffers concussion.

Scenario 6 : **Risk to be determined** - §5.11 Castors and wheels.

The high chair has 4 wheels or castors. A bigger child pushes the high chair with the small child sitting in it. The chair hits something and turns over. The child hits the floor with the head. The child suffers a skull fracture.

Scenario 7 : **Risk to be determined** - §5.6 restraint system.

The restraint system is weak or it can be easily opened by the child. The child tries to stand up in the high chair. The child falls and hits its head into the floor. The child suffers concussion.

Scenario 8 : **Risk to be determined** - §5.6 restraint system.

The restraint system is weak or it could easily be opened by the child. The child becomes excited. The child tries to get out of the restraint system, but slips on the seat. It hits its head on the floor. It suffers a skull fracture. (The severity of the accident depends on the floor surface and the height of the high chair.)

Scenario 9 : **Risk to be determined** - §6 stability.

The high chair is unstable (the center of gravity of the chair is high, near the chest of the child, rather than near the waist as it is with adults). The child is excited. It tries to climb in the unstable high chair. The high chair tips over. The child hits the floor. It suffers a concussion. (The severity of the injury depends on the floor surface.)

Overall risk :

**Risk to be determined**

## Scenario 1 : Very young children - Gap or opening between elements

### Product hazard

Hazard Group: Size, shape and surface  
 Hazard Type: Gap or opening between elements

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §5.2 Holes, gaps or openings.  
 There is a finger-size hole in the table at front of the high chair. A child puts its finger into the hole. The finger gets trapped. The finger breaks.

### Severity of Injury

Injury: Fracture  
 Level: 2 Extremities (finger, toe, hand, foot)  
 Wrist  
 Arm  
 Rib  
 Sternum  
 Nose  
 Tooth  
 Jaw  
 Bones around eye

### Probability of the steps to injury

Step(s) to Injury	Probability
Step 1: A child is sitting in a high chair with a finger size hole on the table at front of the high chair.	1
Step 2: The child puts a finger into the hole. (The propability will often be between 0.1 and 1: It depends upon the exact place of the hole and the geometry of the accessibility area)	
Step 3: The finger gets trapped. (The probability depends upon the size and shape of the hole. It decreases if the size of the hole is close to the threshold values, 7 and 12 mm, given in the standard.)	
Step 4: The child becomes excited and tries to get the finger out of the hole.	

**Step 5: The finger breaks****Calculated probability:****To be determined****Overall probability:****To be determined****Risk of this scenario:****Risk to be determined**

## Scenario 2 : Very young children - Parts moving against one another

### Product hazard

Hazard Group: Kinetic energy  
Hazard Type: Parts moving against one another

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §5.3 Moving parts.  
The high chair has a foldable table.  
A child is sitting in the high chair. The child plays with the table. A finger gets entrapped between the table and the arm rest. The finger is crushed.

### Severity of Injury

Injury: Crushing  
Level: 3    Extremities (fingers, toe, hand, foot)  
                  Elbow  
                  Ankle  
                  Wrist  
                  Forearm  
                  Leg  
                  Shoulder  
                  Trachea  
                  Larynx  
                  Pelvis

### Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	A child is sitting in the high chair playing with the table.	1
Step 2:	A finger gets entrapped between the table and the armrest. (The probability depends upon the accessibility of the dangerous zone and the size of the dangerous zone)	
Step 3:	The finger is crushed. (The probability depends upon the sharpness, the material, where the finger is trapped and the force applied)	

**Calculated probability:**

**To be determined**

**Overall probability:**

**To be determined**

**Risk of this scenario:**

**Risk to be determined**

## Scenario 3 : Very young children - Low mechanical stability

### Product hazard

Hazard Group: Potential energy  
Hazard Type: Low mechanical stability

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §5.4 Locking mechanism.  
A child is sitting in the folding chair. The locking mechanism breaks or is inadequately engaged. The chair folds unintentionally. The chair tilts. The child bangs its head into the floor. The child suffers concussion.

### Severity of Injury

Injury: Concussion  
Level: 2 Very short unconsciousness (minutes)

### Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	A child is sitting in the folding chair	1
Step 2:	The locking mechanism breaks or is inadequately engaged.	
Step 3:	The chair folds unintentionally.	
Step 4:	The chair tilts.	
Step 5:	The child bangs its head into the floor.	
Step 6:	The child suffers concussion.	

**Calculated probability:**

To be determined

**Overall probability:**

To be determined

**Risk of this scenario:**

Risk to be determined



## Scenario 4 : Very young children - Product is or contains small part

### Product hazard

Hazard Group: Size, shape and surface  
 Hazard Type: Product is or contains small part

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §5.5 Small parts, e.g. small parts from toys fixed to the table of the high chair.  
 A child is sitting in a high chair, playing with the toys fixed to the table. The child is unattended or the carer is doing household activities. The child picks up a detached small part from the toy. The child puts the part into the mouth. The part gets stuck in the larynx and blocks the airways.

### Severity of Injury

Injury: Internal airway obstruction  
 Level: 3 Oxygen flow to brain blocked without permanent consequences

### Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	A child is sitting in a high chair, playing with the toys fixed to the table of the high chair .	
Step 2:	The child is unattended or the carer is doing household activities.	
Step 3:	A child picks up a detached small part from the toy. (The probability depends upon the force required to detach the small part)	
Step 4:	The child puts the part into its mouth. (Children of this age will normally put things into their mouth)	
Step 5:	The part gets stuck in the larynx. (The probability is often estimated to 1/1.000 in other risk assessments.)	
Step 6:	The small part blocks the airways. (The probability depends upon shape, size or presence of holes in the object)	

**Calculated probability:**

**To be determined**

**Overall probability:**

**To be determined**

**Risk of this scenario:**

**Risk to be determined**

## Scenario 5 : Very young children - Low mechanical stability

### Product hazard

Hazard Group: Potential energy  
Hazard Type: Low mechanical stability

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §5.6 Restraint system  
A high chair is equipped with an inadequate or weak restraint system. The child is excited and is pushing against the table. The high chair tips over. The child hits the floor with the head/neck. The child suffers concussion.

### Severity of Injury

Injury: Concussion  
Level: 2 Very short unconsciousness (minutes)

### Probability of the steps to injury

Step(s) to Injury	Probability
Step 1: A high chair is equipped with a too weak or inadequate restraint system.	1
Step 2: The child pushes against the table. (Pushing against a nearby table with its feet is common behavior for children of this age group. The probability also depends upon the construction of the chair.)	
Step 3: The high chair tips over. (The probability can be derived from analysis of tests of the high chair as well as examination of the construction in general.)	
Step 4: The child hits the floor with its head. (The probability depends upon the direction of the fall and the construction of the chair).	
Step 5: The child suffers concussion. (The probability depends upon the material of the floor, the height of the chair and the direction of the fall.)	

**Calculated probability:**

**To be determined**

**Overall probability:**

**To be determined**

**Risk of this scenario:**

**Risk to be determined**

## Scenario 6 : Very young children - Low mechanical stability

### Product hazard

Hazard Group: Potential energy  
Hazard Type: Low mechanical stability

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §5.11 Castors and wheels.  
The high chair has 4 wheels or castors. A bigger child pushes the high chair with the small child sitting in it. The chair hits something and turns over. The child hits the floor with the head. The child suffers a skull fracture.

### Severity of Injury

Injury: Fracture  
Level: 3 Ankle  
Leg (femur and lower leg)  
Hip  
Thigh  
Skull  
Spine (minor compression fracture)  
Jaw (severe)  
Larynx  
Multiple rib fractures  
Blood or air in chest

### Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	The high chair has 4 wheels or castors.	1
Step 2:	A bigger child pushes the high chair with a child sitting in it. (This is quite normal behavior for children.)	
Step 3:	The chair hits something and turns over. (The probability depends upon the speed, the force Applied, the item that is hit and the stability of the high chair.)	
Step 4:	The child hits the floor with the head. (The probability depends upon the direction of the fall and the construction of the chair.)	

Step 5: The child suffers fracture. (The probability depends on the material of the floor, the height of the chair and the direction of the fall.)

**Calculated probability:**

**To be determined**

**Overall probability:**

**To be determined**

**Risk of this scenario:**

**Risk to be determined**

## Scenario 7 : Very young children - Missing or incorrectly fitted protection

### Product hazard

Hazard Group: Product operating hazards  
Hazard Type: Missing or incorrectly fitted protection

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §5.6 restraint system.  
The restraint system is weak or it can be easily opened by the child. The child tries to stand up in the high chair. The child falls and hits its head into the floor. The child suffers concussion.

### Severity of Injury

Injury: Concussion  
Level: 3 Prolonged unconsciousness

### Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	A child is sitting in the high chair.	1
Step 2:	The child is unattended.	
Step 3:	The restraint system is weak or it can be easily opened by the child.	
Step 4:	The child tries to stand up in the high chair.	
Step 5:	The child falls and hits its head into the floor.	
Step 6:	The child suffers concussion.	

**Calculated probability:**

To be determined

**Overall probability:**

To be determined

**Risk of this scenario:**

Risk to be determined

## Scenario 8 : Very young children - Missing or incorrectly fitted protection

### Product hazard

Hazard Group: Product operating hazards  
Hazard Type: Missing or incorrectly fitted protection

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §5.6 restraint system.  
The restraint system is weak or it could easily be opened by the child. The child becomes excited. The child tries to get out of the restraint system, but slips on the seat. It hits its head on the floor. It suffers a skull fracture. (The severity of the accident depends on the floor surface and the height of the high chair.)

### Severity of Injury

Injury: Fracture  
Level: 3 Ankle  
Leg (femur and lower leg)  
Hip  
Thigh  
Skull  
Spine (minor compression fracture)  
Jaw (severe)  
Larynx  
Multiple rib fractures  
Blood or air in chest

### Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	A child is sitting in the high chair.	1
Step 2:	Thee child is unattended.	
Step 3:	The restraint system is weak or it can be easly opened by the child.	
Step 4:	The child becomes agitated. It tries to get out of the restraint system, but slips on the seat, falls and hits its head on the floor.	



Step 5: The child suffers a skull fracture. (The gravity of the accident depends on the floor surface and the height of the high chair.)

**Calculated probability:**

To be determined

**Overall probability:**

To be determined

**Risk of this scenario:**

Risk to be determined

## Scenario 9 : Very young children - Low mechanical stability

### Product hazard

Hazard Group: Potential energy  
Hazard Type: Low mechanical stability

### Consumer

Consumer Type: Very young children - 0 to 36 months (Very vulnerable consumers)

### How the hazard causes an injury to the consumer

Injury scenario: §6 stability.  
The high chair is unstable (the center of gravity of the chair is high, near the chest of the child, rather than near the waist as it is with adults). The child is excited. It tries to climb in the unstable high chair. The high chair tips over. The child hits the floor. It suffers a concussion. (The severity of the injury depends on the floor surface.)

### Severity of Injury

Injury: Concussion  
Level: 3 Prolonged unconsciousness

### Probability of the steps to injury

Step(s) to Injury	Probability
Step 1: A child is sitting in the high chair. The center of gravity of the chair is high, near the chest of the child, rather than near the waist as it is with adults.	1
Step 2: The child is unattended.	
Step 3: The child is excited and tries to climb in the unstable high chair.	
Step 4: The high chair tips over.	
Step 5: The child hits the floor.	
Step 6: The child suffers a concussion. (The severity of the injury depends on the floor surface.)	

**Calculated probability:**

To be determined

**Overall probability:**

To be determined

**Risk of this scenario:**

Risk to be determined