### NAT
Naturalistic Action Test

**Scoring sheet:** Comprehensive Error Score

### Notes
- You may photocopy this scoring sheet.
- CES coding must be completed by referring to a video film record of the subject's performance.

### Subject and test details

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of birth</th>
<th>Age</th>
<th>Gender</th>
<th>Today's date</th>
<th>Diagnosis</th>
</tr>
</thead>
</table>

### Score summary

<table>
<thead>
<tr>
<th>Error type</th>
<th>Number of errors</th>
<th>Present</th>
<th>Lunchbox</th>
<th>Schoolbag</th>
<th>Total</th>
<th>Standardized Error Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step omission</td>
<td>/5</td>
<td>/7</td>
<td>/12</td>
<td>/8</td>
<td>/35</td>
<td>x 100 =</td>
</tr>
<tr>
<td>Anticipation/omission</td>
<td>/7</td>
<td>/7</td>
<td>/11</td>
<td>/6</td>
<td>/33</td>
<td>x 100 =</td>
</tr>
<tr>
<td>Perseveration</td>
<td>/5</td>
<td>/2</td>
<td>/2</td>
<td>/7</td>
<td>/16</td>
<td>x 100 =</td>
</tr>
<tr>
<td>Reversal</td>
<td>/5</td>
<td>/6</td>
<td>/4</td>
<td>/1</td>
<td>/17</td>
<td>x 100 =</td>
</tr>
<tr>
<td>Substitution</td>
<td>/4</td>
<td>/6</td>
<td>/10</td>
<td>/3</td>
<td>/27</td>
<td>x 100 =</td>
</tr>
<tr>
<td>Gesture</td>
<td>/4</td>
<td>/3</td>
<td>/4</td>
<td>/5</td>
<td>/16</td>
<td>x 100 =</td>
</tr>
<tr>
<td>Spatial estimation</td>
<td>/1</td>
<td>/3</td>
<td></td>
<td></td>
<td>/4</td>
<td>x 100 =</td>
</tr>
<tr>
<td>Tool/implement omission</td>
<td>/3</td>
<td>/1</td>
<td>/3</td>
<td></td>
<td>/10</td>
<td>x 100 =</td>
</tr>
<tr>
<td>Action addition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>total =</td>
</tr>
<tr>
<td>Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>total =</td>
</tr>
</tbody>
</table>

### Error definitions

**Step omission**
This category refers mostly to isolated step omissions that come at the end of sequence or when a longer sequence is omitted. In the latter case (e.g., omission of an entire subtask), multiple step omissions are coded.

**Anticipation/omission**
This category is used mostly for omissions that come in the middle of a strong sequence, where an upcoming step is performed in advance of an intervening one. The error stands whether or not the omitted step is eventually performed.

**Perseveration**
Performs an act for an extended period of time (e.g., stirring); duplicates a step or materials involved (e.g., two slices of bread for toast task); iterates repetitively (e.g., taping package).

**Reversal**
Performs steps or subtasks in reverse order.

**Substitution**
Substitutes a related object (usually a designated distractor) for the target object. Bizarre substitutions are coded as action additions, rather than substitutions.

**Gesture**
Uses correct object but with wrong gesture; mis-orients object relative to the hand or to another (reference) object.

**Spatial estimation**
Grossly mis-estimates the quantity of material needed to cover, wrap, etc.

**Tool/implement omission**
Performs action without tool/implement.

**Action addition**
Performs an action not readily interpretable as a step in the task or as one of the other error categories (e.g., object substitution). Includes utilization behavior (both typical and atypical object use) and off-task behaviors which interrupt the flow of the task. (Note: ‘Other task’ behaviors such as tying shoes, cleaning up, etc. are not coded as errors.)

**Quality**
Too much, too little, or inexact performance.
**Task 1: Toast and Coffee**

### Toast task

**Step Omission**
- Toast bread: Omit remove bread slice
- Omit put bread into toaster
- Omit turn toaster on
- Apply butter: Omit apply butter
- Apply jelly/jam: Omit apply jelly

**Anticipation/omission**
- Toast bread: Attempt bread out without open bread bag
- Toaster on without bread in
- Apply butter: Attempt butter on without open dish
- Butter on without toast bread
- Apply jelly/jam: Attempt jelly on without open jar
- Jelly on without butter on
- Jelly on without toast bread

**Perseveration**
- Toast bread: Extract more than one piece of bread
- Toast more than 1 slice of bread
- Operate toaster repeatedly
- Apply butter: Apply butter perseveratively
- Apply jelly/jam: Apply jelly perseveratively

**Reversal**
- Toast bread: Toaster on, then bread in
- Bread out, then toaster on
- Apply butter: Apply butter, then toast bread
- Apply jelly, then toast bread

**Substitution**
- Apply butter: Butter into mug (target = toast)
- Spread butter with spoon (t = knife)
- Apply jelly/jam: Jelly into mug (t = toast)
- Spread jelly with spoon (t = knife)

**Gesture**
- Apply butter: Grasp knife incorrectly
- Mis-orient knife with respect to butter/bread/hand
- Apply jelly/jam: Grasp knife incorrectly
- Mis-orient knife with respect to jelly/jam/bread/hand

**Tool/implement omission**
- Apply butter: Apply butter with finger
- Apply jelly/jam: Apply jelly with finger

### Coffee task

**Step Omission**
- Coffee: Omit add coffee
- Sugar: Omit add sugar
- Cream: Omit add cream

**Anticipation/omission**
- Grinds: Add grinds without open coffee jar
- Stir mug without add grinds

**Perseveration**
- Coffee: Add grinds perseveratively
- Stir perseveratively

**Reversal**
- Coffee: Stir mug, then add grinds

**Substitution**
- Coffee: Coffee into (sugar bowl, pitcher/jug, toast) (t = mug)
- Stir mug with knife (t = spoon)
- Sugar: Sugar into (sugar bowl, pitcher/jug, toast) (t = mug)
- Cream/milk: Cream into (sugar bowl, pitcher/jug, toast) (t = mug)

**Gesture**
- Coffee: Pour from spoon prematurely (before reaching mug)
- Cream/milk: Pour from side, rather than spout, of pitcher
- Pour from pitcher prematurely (before reaching mug)

**Tool/implement omission**
- Coffee: Pour grinds from jar
- Coffee: Stir mug with finger
- Sugar: Pour sugar from jar

### Action addition

- Add grinds
- Stir mug

### Quality (examples)

- Too much coffee (> 2 spoons)
- Too much sugar (> 4 spoons)
- Too much cream/milk (overflows)

### Task 2: Present

**Present task**

**Step Omission**
- Prepare box: Omit put gift into box
- Omit close box lid
- Wrap present: Omit cut wrapping paper
- Omit apply paper around box
- Omit tape seam
- Add bow: Omit remove bow backing
- Omit apply bow

**Anticipation/omission**
- Prepare box: Close flaps without gift into box
- Close box lid without inserting flaps
- Wrap present: Paper around box without closing lid
- Tape paper without tear tape
- Apply bow without remove backing
- Apply bow without apply paper around box
- Apply bow without tape seam
## Task 3: Lunchbox and Schoolbag

### Lunchbox task

<table>
<thead>
<tr>
<th>Step Omission</th>
<th>Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrap &amp; pack cookies/biscuits: Omit use cookies/biscuits</td>
<td>0</td>
</tr>
<tr>
<td>Omit wrap cookies/biscuits</td>
<td>0</td>
</tr>
<tr>
<td>Make sandwich: Omit put bologna/cheese slices on bread</td>
<td>0</td>
</tr>
<tr>
<td>Omit close/fold sandwich</td>
<td>0</td>
</tr>
<tr>
<td>Wrap &amp; pack sandwich: Omit wrap sandwich</td>
<td>0</td>
</tr>
<tr>
<td>Omit pack sandwich</td>
<td>0</td>
</tr>
<tr>
<td>Fill thermos: Omit fill thermos</td>
<td>0</td>
</tr>
<tr>
<td>Seal &amp; pack thermos: Omit seal with lid</td>
<td>0</td>
</tr>
<tr>
<td>Omit seal with cap</td>
<td>0</td>
</tr>
<tr>
<td>Omit pack thermos</td>
<td>0</td>
</tr>
<tr>
<td>Close lunchbox: Omit close lunchbox</td>
<td>0</td>
</tr>
</tbody>
</table>

### Perseveration

- Wrap present: Apply paper perseveratively
  - Apply tape perseveratively

### Reversal

- Prepare box: Close flap, then gift into box
  - Close lid, then insert flaps
- Wrap present: Cut paper, then unroll
  - Tape paper, then tear tape
- Add bow: Back off bow, then bow out of bag
  - Bow on paper or box, then wrap gift

### Substitution

- Wrap present: Wrap with tissue paper (t=wrapping paper)
  - Seal paper seam with bow (t=tape)
  - Wrap with tissue paper, paper bag (t=wrapping paper)
  - Seal paper seam with bow, el. tape, staples (t=tape)
  - Gift into paper bag (t=box)
  - Cut paper with snippers (t=scissors)

### Gesture

- Wrap present: Grasp scissors incorrectly
  - Misorient scissors with respect to paper/hand/body
  - Misorient paper with respect to box
- Add bow: Lick bow after removing bow back

### Spatial estimation

- Wrap present: Paper too small

### Tool/implement omission

- Wrap present: Rip paper (no scissors used)

### Action addition

- e.g. Fold wrapping paper
- Inappropriate use of bow
- Put wrapped gift into box

### Quality (examples)

- Close box with tissue paper/gift protruding
- Cut too big a piece of paper
- Highly inept wrap

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**Task 3: Lunchbox and Schoolbag**

### Lunchbox task

<table>
<thead>
<tr>
<th>Step Omission</th>
<th>Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omit wrap cookies/biscuits</td>
<td>0</td>
</tr>
<tr>
<td>Omit use cookies/biscuits</td>
<td>0</td>
</tr>
<tr>
<td>Omit pack cookies/biscuits</td>
<td>0</td>
</tr>
<tr>
<td>Omit put bologna/cheese slices on bread</td>
<td>0</td>
</tr>
<tr>
<td>Omit close/fold sandwich</td>
<td>0</td>
</tr>
<tr>
<td>Omit wrap sandwich</td>
<td>0</td>
</tr>
<tr>
<td>Omit pack sandwich</td>
<td>0</td>
</tr>
<tr>
<td>Omit fill thermos</td>
<td>0</td>
</tr>
<tr>
<td>Omit seal with lid</td>
<td>0</td>
</tr>
<tr>
<td>Omit seal with cap</td>
<td>0</td>
</tr>
<tr>
<td>Omit pack thermos</td>
<td>0</td>
</tr>
<tr>
<td>Omit close lunchbox</td>
<td>0</td>
</tr>
</tbody>
</table>

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**Anticipation/omission**

- Wrap & pack cookies/biscuits: Pack without wrap
- Make sandwich: Extract bread without open bread bag
  - Attempt knife into jar/butter tub without open jar/tub
  - Close sandwich without apply bologna/cheese slices
- Wrap & pack sandwich: Pack without wrap sandwich
- Fill thermos: Attempt to pour juice without open juice jar
  - Seal & pack thermos: Seal thermos with lid without fill thermos
  - Apply thermos cap without apply lid
  - Pack thermos without fill thermos (no lids on)
  - Pack thermos without apply cap
- Close lunchbox: Close lunchbox prematurely

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**Perseveration**

- Wrap & pack cookies/biscuits: Tear foil perseveratively (for cookies/biscuits)
- Extract cookies/biscuits perseveratively
  - Pack cookies/biscuits perseveratively
- Make sandwich: Extract bread from bag perseveratively
  - Close/fold sandwich perseveratively
- Wrap & pack sandwich: Tear foil perseveratively (for sandwich)
  - Wrap sandwich perseveratively

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**Reversal**

- Wrap & pack cookies/biscuits: Cookies/biscuits on foil before tear foil
  - Pack cookies/biscuits before wrap (wrap in lunchbox)
  - Sandwich on foil before tear foil
  - Pack sandwich before wrap sandwich (wrap in lunchbox)

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**Substitution**

- Wrap & pack cookies/biscuits: into paper towel (t=foil)
- Cookies/biscuits into lunchbox lid (t=lunchbox interior)
- Make sandwich: Wrong lid onto mustard jar/butter tub
  - Wrap & pack sandwich: Wrap sandwich in paper towel (t=foil)
  - Pack sandwich into lunchbox lid (t=lunchbox interior)
- Fill thermos: Pour juice into thermos cup (t=thermos)
  - Seal & pack thermos: Put wrong lid on thermos
  - Put wrong lid onto sealed thermos (t=cap)
  - Pack juice bottle into lunchbox (t=thermos)
  - Pack thermos into lunchbox lid (t=lunchbox interior)

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**Gesture**

- Make sandwich: Turn mustard cap back and forth to seal
  - Grasp knife incorrectly
  - Orient knife incorrectly with respect to body or bread
- Seal & pack thermos: Place lid with press rather than screw motion
  - Turn thermos lid back and forth to seal

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**Spatial estimation**

- Wrap & pack cookies/biscuits: Foil too small
- Wrap & pack sandwich: Foil too small for sandwich
- Packing: Force lunchbox closed (items sticking up)

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**Tool/implement omission**

- Make sandwich: Dip bread into mustard jar/butter tub
  - Pour/spread mustard/butter onto bread
  - Use finger with mustard/butter

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**Action addition (examples)**

- Flip bologna/cheese slice with knife
- Eat bologna/cheese slices
- Put juice bottle in lunchbox lid
Wrap cookies/biscuits with sandwich
Fold and crumple paper towel

**Action addition** (example)
Pack lunchbox in schoolbag

**Quality**
e.g. Too many cookies/biscuits (>8); not perseverative
Inadequate wrap of cookies/biscuits
Too much mustard/butter (grossly excessive)
Too many bologna/cheese slices (> six slices)
Inadequate wrap of sandwich
Too much juice (overflow)

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**Schoolbag task**

<table>
<thead>
<tr>
<th>Step Omission</th>
<th>Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder: Omit insert paper</td>
<td>☐</td>
</tr>
<tr>
<td>Omit pack binder</td>
<td>☐</td>
</tr>
<tr>
<td>Pencil case: Omit fill pencil case</td>
<td>☐</td>
</tr>
<tr>
<td>Omit pack pencil case</td>
<td>☐</td>
</tr>
<tr>
<td>Markers etc.: Omit pack markers</td>
<td>☐</td>
</tr>
<tr>
<td>Omit pack all of following: protractor, pencil sharpener, eraser, unpacked pens, pencils, ruler</td>
<td>☐</td>
</tr>
<tr>
<td>Close: Omit zip school bag</td>
<td>☐</td>
</tr>
<tr>
<td>Omit zip school bag pocket (required only if filled)</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Anticipation/omission**

| Binder: Insert paper without open rings | ☐ |
| Close rings without insert paper | ☐ |
| Pack without close rings | ☐ |
| Pack without insert paper | ☐ |
| Pencil case: Close pencil case without fill pencil case | ☐ |
| Pack pencil case without close pencil case | ☐ |

**Reversal**

| Pencil case: Pack pencil case, then zip closed | ☐ |

**Substitution**

| Binder: Pack paper into lunchbox, pencil case, or marker case or drawer (t=binder or schoolbag) | ☐ |
| Pencil case: Pack pencils into lunchbox, binder pocket or marker case, or drawer (t=pencil case) | ☐ |
| Markers: Pack markers into LB or binder pocket or drawer (t=marker case) | ☐ |