Making a rehab video game takes input from clinicians, developers, and players. Here are helpful tips for teams looking to add biofeedback into their video games.

**Overview**

**What is biofeedback?**

Biofeedback gives people information about their body. People use biofeedback to learn how to control their body better. Biofeedback can help in learning new skills.

**Biofeedback in games**

Games can deliver biofeedback to promote learning:

- **Player does a rehab activity**
- **Sensor records activity**
- **Activity controls game**
- **Feedback based on activity is generated**

Well integrated biofeedback closely links game feedback with the rehab activity.

**Biofeedback design characteristics**

**Feedback can be about:**

- movement (speed, accuracy, distance)
- performance (good or poor)
- health data (heart rate, muscle activity)

**Feedback can be delivered in different ways:**

- audio
- visual
- tactile

**Feedback can be given at different times:**

- during or after a game
- when the player performs well or poorly
- with decreasing frequency as the player improves

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**Systematic review source**


**Infographic creators**

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Feedback should match the player’s needs:

<table>
<thead>
<tr>
<th>Player goal</th>
<th>Practice</th>
<th>Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: increase repetitions</td>
<td>Goal: increase repetitions</td>
<td>Goal: improve technique</td>
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<tr>
<td>• feedback</td>
<td>• feedback</td>
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<tr>
<td>• error tolerance</td>
<td>• error tolerance</td>
<td>• error tolerance</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Skill difficulty</th>
<th>Simple skills</th>
<th>Complex skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>★★★☆☆</td>
<td>Give instructional feedback</td>
<td>Give success/failure feedback</td>
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<table>
<thead>
<tr>
<th>Player skill level</th>
<th>Novice</th>
<th>Expert</th>
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<tbody>
<tr>
<td>★★★★★</td>
<td>detail in feedback</td>
<td>detail in feedback</td>
</tr>
<tr>
<td>★★★★</td>
<td>instructions</td>
<td>instructions</td>
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</tbody>
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Here are 3 approaches to feedback that are hardly used even though they can be effective.

**Build in choice**
Giving players choice can help motivate them to learn new skills. They might choose to:
- get feedback
- ignore feedback
- customize feedback

**Less is more**
As players get more skilled, they should rely on themselves more than on the feedback. Only give feedback when they need it:
- once a skill is learned, no longer provide instructions
- only provide feedback when the player succeeds/fails

**Mix it up**
Changing how feedback looks helps the player become more independent. Variations can be:
- giving feedback at the end of the level instead of during the level
- going from more detailed feedback (e.g. instruction) to less detailed (e.g. a sound)