



REDCap Smart Variables

Smart Variables allow you to dynamically reference information about the current record, event, user, or system context—without needing to create additional fields. They are especially powerful in longitudinal and repeating projects, and when building advanced logic.

Smart Variables:

- allow you to reference context (e.g., current event, previous instance, record ID) dynamically within logic, calculations, and other REDCap features.
- Reference the current record ID
- Pull values from other events
- Identify first/last events or instances
- Track user and timestamp information
- Enable dynamic logic without extra fields
- Do not store data—they dynamically return values based on the current context.
- Smart Variables can be used anywhere logic is supported (branching, ASIs, Alerts, calculations).
- Use Smart Variables to reduce redundancy and avoid creating unnecessary fields.

Syntax

Smart Variables are referenced using square brackets, just like regular fields.

```
[record-id]  
[current-event-name]  
[first-instance]
```

Common Smart Variables

Current record ID: `[record-id]`

Current event: `[event-name]`

Current user: `[user-name]`

Event Based Smart Variable: `[first-event-name]`

Event Based Smart Variable: `[last-event-name]`

Event Based Smart Variable: `[current-event-name]`

Repeating Instruments

```
[first-instance]  
[last-instance]  
[current-instance]
```

Example:

```
[blood_pressure][last-instance]
```

Tip: Useful for pulling latest values dynamically

Record-Level Variables

```
[record-id]  
[redcap-event-name]
```

User and System Variables

```
[username]  
[user-email]  
[today]  
[now]
```

Tip: Values update dynamically each time accessed.

Real-World Examples

Use Latest Value

```
[weight][last-instance]
```

Reference Baseline

```
[first-event-name][age]
```

Timestamp

```
[now]
```

Common Mistakes

- Treating Smart Variables like stored data
- Incorrect event names
- Using without testing context

Best Practices

- Use for dynamic references
- Test in real records
- Keep logic readable