

## Repeating Data Collection in REDCap

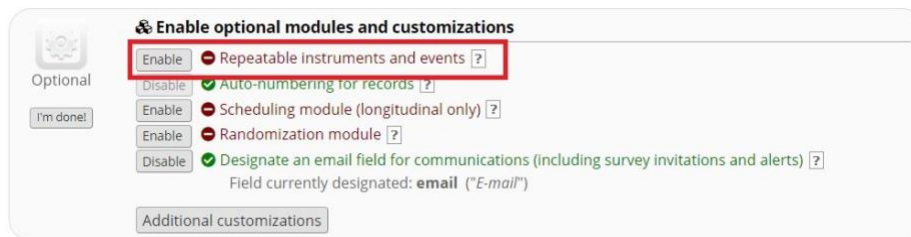
The repeating instruments and events module is a REDCap feature useful for collecting data multiple times using the same instruments *without* set time points. There is also no limit to how many times a repeatable instrument or event is repeated for an individual record. This is useful for instances in which data will be collected using the same instrument multiple times, but the number of times will vary across participants. Repeatable instruments can be used in classic and longitudinal projects, while repeatable events are *only* for longitudinal projects.

### Example Use Cases for Repeatable Instruments/Events

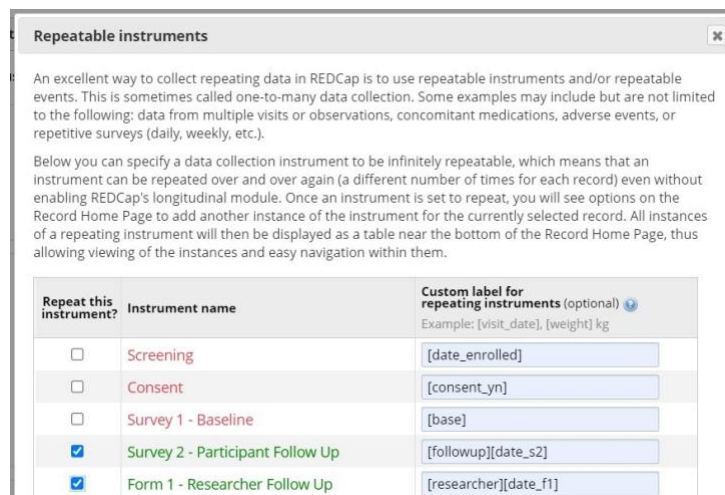
- Participants are asked to complete a form each time they are admitted to a facility, like a hospital;
- Forms for tracking samples;
- Contact logs, adverse event forms, or billing logs; or
- A parent is asked to complete a survey for each child they have.

### How to Set Up Repeating Instruments and/or Events

1. On the “Project Setup” tab, select “Enable” next to “Repeatable instruments” in the “Enable optional modules and customizations” box.



2. A pop up will appear with a list of your instruments. Select which instruments you would like to be repeatable.



- a. Custom label for repeating instruments – Variables can be piped here to customize what appears next to each repeated instance on an individual’s record dashboard.
- b. If you have the longitudinal module enabled, this pop up will be organized by event name and you can select whether to repeat instruments within the same event together or independently of one another.

### How to Add a New Instance as a Form

1. While logged into REDCap, go to “Add/Edit Records” and select the record needed.
2. Click “+” or “+ Add New” on any repeating instrument or event to add a new instance. You can also add a new instance from within the instrument.
  - a. In the example below, the blue status circle next to the form means a mix of complete and incomplete instances.

Record ID 11

Data Collection Instrument	Status
Screening (survey)	
Consent (survey)	
Survey 1 - Baseline (survey)	
Survey 2 - Participant Follow Up	
Form 1 - Researcher Follow Up	
Other info	

Repeating Instruments

Form 1 - Researcher Follow Up (3)		
1		06-03-2021
2		07-23-2021
3		08-12-2021
Add new		

Save & Exit Form    Save & ...

-- Cancel --

Delete data for THIS record

NOTE: To delete the entire record action drop-down

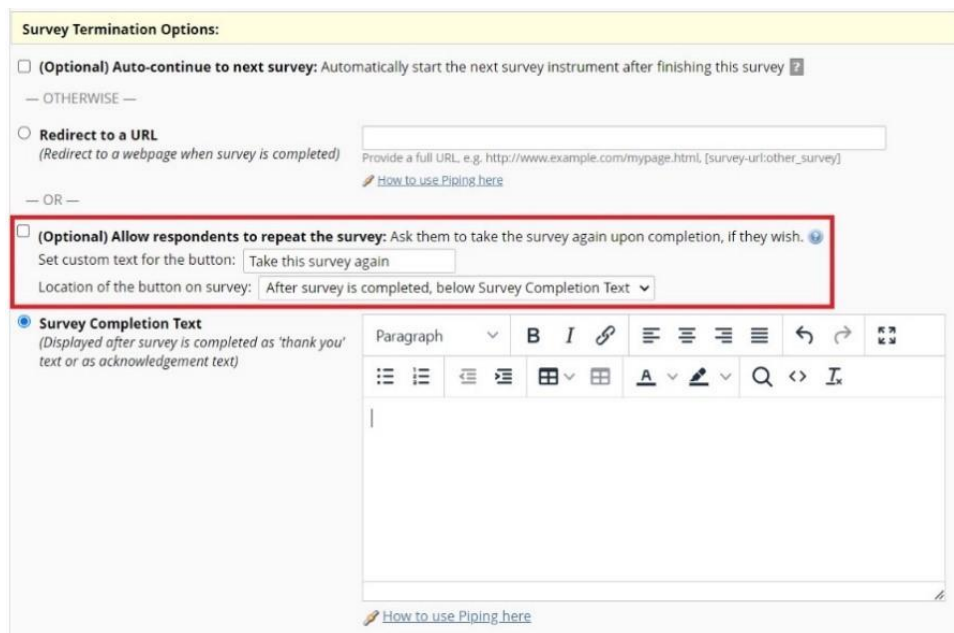
- Save & Stay
- Save & Go To Next Instance**
- Save & Go To Next Form
- Save & Exit Record
- Save & Go To Next Record

### How to Add a New Instance as a Survey

There are three different options for entering a new instance as a survey. Each option has its own pros and cons that should be weighed carefully based on your project needs. Additionally, the options listed are not mutually exclusive and can be used in combination together for multiple surveys within a project.

### “Repeat the Survey” Button at the End of a Survey

When a survey is enabled as a repeating instrument, the survey option “Allow respondents to repeat the survey” appears under “Survey Termination Options” in “Survey Settings.” Selecting this will create a customizable repeat button for participants. The repeating button can appear next to the submit button before the survey is repeated or after the survey is completed on the survey completion page. If enabled, a green repeat arrow appears next to the instrument on “Online Designer.”



Note: The “Repeat the Survey” button option is not available for repeating events with instruments that repeat together (i.e., not independently of one another).

### Sending Automatic Survey Invitations (ASI) for Repeating Instruments

Automatic survey invitations, or ASIs, can be set up to send survey links for a repeating instrument at a recurring interval and can be used for repeating instruments and instruments on repeating events. This method will also work with Twilio SMS and Voice Calls.

### How to Set Up an ASI for a Repeating Instrument

1. From the “Online Designer” page, select “Automated Invitations” next to the repeatable survey for which you would like to send invitations. A “Define Conditions for Automated Survey Invitations (ASI)” pop up will appear. Complete steps 1 through 3.
2. ASIs for repeatable surveys have an additional step compared to traditional ASIs. This is where you will set how many times and how often the survey invitation should be sent. Each invitation will be a new instance and all scheduled invitations are based on when the first invitation is sent.

**Define Conditions for Automated Survey Invitations (ASI)**

In this pop-up you may define your conditions for automated survey invitations that will be sent out for the survey (and event, if a longitudinal project) listed in the info box below. [Tell me more](#)

**Activate automated invitations for this survey?**  
**Survey title:** Exercise Questionnaire  
 \*Active\* must be selected in order for automated survey invitations to be triggered and sent using the conditions specified in this popup. You may make it Not Active (and vice versa) at any point in the future. [?] [How to use "stop logic" to disable an automated invite](#)

Active  Not Active

**STEP 1: Compose message**

**From:**    
 (select any project user to be the "Sender")

**To:** [All participants who meet the conditions defined]

**Subject:**

Paragraph

Please take this survey.  
 You may open the survey in your web browser by clicking the link below:  
  
 If the link above does not work, try copying the link below into your web browser:  
  
 This link is unique to you and should not be forwarded to others.

**NOTE:** You may modify or remove any text you wish in the Compose Message text box above. Make sure you include either [survey-link] or [survey-url] in the text or else the participant will not have a way to take the survey.  
[How to use "Print" in the survey invitation](#)

**STEP 2: Conditions**

**Specify conditions for sending invitations:**

When the following survey is completed:

AND  OR

When the following logic becomes true:

(e.g., [age] > 30 and [sex] == "F") [How do I use special functions?](#)  
 Test logic with a record

Ensure logic is still true before sending invitation? [?] [How to use "stop logic" to disable an automated invite](#)

**STEP 3: When to send invitations AFTER conditions are met**

Send immediately

Send on next  at time  :MM

Send the invitation  days  hours  minutes  
 after  the exact time that the automated invitation was triggered [?]

Send at exact date/time:  :MM

**STEP 4: How many times to send it (repeating surveys only)**

Just once

Multiple times on a recurring basis:

Send every  days after initially being sent.

Send up to  times total (including the first time sent).  
 Leave blank to continue triggering and sending forever.

[Learn about Data Collection Strategies for Repeating Surveys](#)

**OPTIONAL: Enable reminders**

Re-send invitation as a reminder if participant has not responded by a specified time?

- a. Note: Scheduled ASIs for repeatable surveys can be cancelled via the “Survey Invitation Log.” However, cancelling one invitation will delete all scheduled future invitations for that participant’s survey.
3. Don’t forget to set the ASI to “Active” and click “Save!”

### Sending Alerts for Repeating Instruments

Alerts can also be used to email participants a link to create a new instance of the repeating survey. This is done using the “Smart Variables” [survey-link] or [survey-url] and [new-instance] in the alert message. Compared to ASIs, the alert module provides more flexibility in how the alert is triggered, scheduled, and where it is sent.

Below is an example of how [survey-link] or [survey-url] and [new-instance] can be used in an alert message. In this example, the following syntax is used to create the survey links to a new instance of the instrument named “Exercise Questionnaire”:

[survey-link:exercise\_questionnaire:Exercise Questionnaire][new-instance] and [survey-url:exercise\_questionnaire][new-instance]

STEP 3: Message Settings

**Alert Type:**  Email  SMS Text Message  Voice Call

**Email From:** \* must provide value

**Email To:** \* must provide value  
  
+ Show more options  
 Or manually enter emails:

**Subject:** \* must provide value

**Message:** \* must provide value

Paragraph ↶ ↷

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Please take this survey whenever you exercise:  
 [survey-link:exercise\_questionnaire:Exercise Questionnaire][new-instance]  
 [survey-url:exercise\_questionnaire][new-instance]

Thank you,

Prevent piping of data for identifier fields ?

In the subject or message, you may use Piping and Smart Variables

Example:  
 Hi [first\_name]! Please complete this survey: [survey-link:followup\_survey]

Learn about [Data Collection Strategies for Repeating Surveys](#)

Example of a repeating survey using recurring alerts:  
 Please complete your daily survey: [survey-link:daily\_repeating\_survey][new-instance]

Add attachments

### Importing Repeating Instances

When importing data into a repeating instance, it is important to notate the instance, instrument, and if applicable, event. See the [Importing Data to REDCap](#) document for more detailed information.

### Exporting Repeating Instances

Data from repeating instruments and events will export in a long format. You may need to reformat your data after it is exported. In the example below, records 1 and 2 have data for the repeating instrument “Practice Form” which contains the question “Does the pet have a vet?” while record 3 does not.

Record ID record_id	Repeat Instrument redcap_repeat_instrument	Repeat Instance redcap_repeat_instance	Today's Date enroll_date	Pet Name pet_id	Please select the option that best describes the origin of the pet's name: name_origin	Since taking the pet name survey, have you changed your pet's name? name_change	Does the pet have a vet? vet
1			06-23-2021	Spot	Unknown/I did not name this pet (9)	No (0)	
1	Practice Form	1					Yes (1)
1	Practice Form	2					Yes (1)
2			06-23-2021	Zuko	Fictional Character (1)	No (0)	
2	Practice Form	1					No (0)
2	Practice Form	2					No (0)
2	Practice Form	3					No (0)
2	Practice Form	4					Yes (1)
3			06-24-2021	Scissors	Other (10)		

### Using Fields from Repeating Instances in Piping and Logic

Piping and logic that reference fields in repeating instruments will always take data from the first instance of that instrument unless a “Smart Variable” is added *after* the variable name to specify which

repeating instance REDCap should refer to. Additionally, if you have the longitudinal module enabled and the field you are referring to is in a *different* event, you must include the unique event name (e.g., [event\_1\_arm\_1]) *before* the repeating instance variable. You cannot refer to data from a specific instance number.

For example, the equation below uses smart variables to calculate a cumulative working time, [supp\_total], from all previous instances by adding up [supp\_time] in every instance. The smart variables [current-instance], [first-instance], and [previous-instance] indicate to REDCap which [supp\_time] number to use in each part of the equation:

```
if([current-instance]=[first-instance], [supp_time][current-instance], sum([supp_total][previous-instance], [supp_time][current-instance]))
```

A list of smart variables that can be used with repeating instances and events can be viewed by clicking the green “Smart Variable” icon on the “Project Setup” page, “Online Designer” page when building an instrument, “Add or Edit Alert” pop up, and other areas of the REDCap interface.



## Repeating Instances and the Survey Queue

Survey queues that contain repeating instruments work best when the “Repeat the Survey” button is enabled, the queue is *not hidden* for participants, and participants have access to their survey queue link.