



REDCap Survey Design and Administration Guide

REDCap offers several ways to build and distribute surveys, from a simple public survey link to more advanced workflows using the Participant List, Automated Survey Invitations, and Survey Queue. This guide is designed to help study teams choose the right approach, configure surveys intentionally, and avoid common setup mistakes.

For a step-by-step walk through, check out the [Survey Wizard: The Basics](#)

For more advanced survey workflows, REDCap offers several automation tools that support how surveys are delivered, how participants move from one survey to the next, and how study teams are notified when specific conditions are met. Because these tools serve different purposes, it can be difficult to know which one to use.

Core Principle: Decide before building whether your survey will be anonymous or identifiable, whether participants will complete one survey or multiple surveys, and whether invitations will be manual or automated.

Important: Once you use participant email addresses, Participant List, designated email fields, or linked follow-up surveys, the workflow is no longer truly anonymous and must align with your IRB-approved plan

Survey Overview

Any data collection instrument in REDCap can be enabled as a survey, allowing participants to enter data without needing REDCap user access.

Most survey workflows involve three key areas:

- Project Setup – enable surveys and project-level options
- Online Designer – build the instrument, configure Survey Settings, and manage advanced survey features
- Survey Distribution Tools – distribute survey links, manage participants, and review invitation activity

Best practice: Think of survey setup as a workflow, not just a form. The build, invitation method, confidentiality model, and follow-up plan should all be decided together.

SURVEY DESIGN AND ADMINISTRATION

1. Enable and Build Survey. Follow these steps to get started:

- Go to Project Setup and enable Use Surveys in this project
- Go to Online Designer
- Build or revise the instrument
- Click Enable to convert the instrument into a survey
- Open Survey Settings and save changes

If you leave Survey Settings without saving, the instrument will remain a data entry form rather than a survey.

Important: If a project is already in Production and surveys have not been enabled, that option may be locked and require administrator assistance.

2. Configure Survey. Use the following configurations to setup your survey:

- **Basic Options:**
 - Survey Status – active or offline
 - Survey Title – can differ from the instrument name
 - Survey Instructions – text shown at the top of the survey
- **Design & Display:**
 - Logo, font, text size, and theme
 - Question numbering
 - All on one page vs. one section per page
 - Enhanced radio buttons and checkboxes
 - Text-to-speech and accessibility options
- **Access & Response Controls:**
 - Response limit
 - Time limit for survey completion
 - Survey expiration
 - Save & Return Later
 - Allow returning to edit completed responses
- **Completion & Termination:**
 - Survey completion text
 - Redirect to a URL
 - Auto-continue to next survey
 - Allow respondents to repeat the survey, when repeating instruments are enabled
 - PDF Auto-Archiver
 - Confirmation email

- **Stop Action.** Allows a survey to end when a participant selects a specific answer choice on supported field types such as dropdowns, radio buttons, checkboxes, Yes/No, or True/False.
 - Useful for ineligibility screening
 - Useful when a survey should end early based on a response
 - Can display alternate completion text for those who stop out
 - By default, when a survey ends via Stop Action, the partial response is saved and marked complete, even if required questions later in the survey were never answered.
 - If Stop Action is being used for ineligibility screening, consider enabling the option to prevent responses from being saved when the survey ends through a Stop Action.
- **Repeat Survey Option.** If an instrument is enabled as a repeating instrument, Survey Settings can display a button allowing the participant to repeat the survey. This is useful when one person may need to submit multiple similar entries in a single sitting.
- **Survey Notifications.** Send an email to selected project users whenever a survey is completed.
 - Configured from **Online Designer → Survey Notifications**
 - Useful when the study team needs prompt awareness of new survey responses
 - The email includes a link to the response, not the survey data itself
 - Notifications can become overwhelming in higher-volume projects. In those cases, a report or alert-based workflow may be more manageable.
- **Special Use Cases:**
 - **Save Survey PDF to File Upload field** – useful when another form or user needs a snapshot of a completed survey
 - **Survey-specific email invitation field** – useful when different surveys in one project are completed by different people
 - **e-Consent Framework** – supports certification and archiving workflows for electronic consent

3. Choose a Distribution Method. Most survey workflows fall into one of four categories:

Method	Best For
Public Survey Link	Open-access or truly anonymous surveys. The Public Survey Link is the simplest and fastest way to distribute a survey. It uses one shared link for all respondents:

	• Best for anonymous or open-access workflows • No respondent-specific tracking • Allows multiple submissions unless additional controls are added • Only the first survey in a project has a public survey link <i>Important: A public survey link can be shared, reposted, or reused. If the survey involves compensation, eligibility screening, or sensitive recruitment, a public link requires additional safeguards.</i>
Participant List	Known participants, one-time links, reminders, response tracking. The Participant List allows you to send customized email invitations and track whether each person has responded. What it does: • Add participants by email address • Optionally add a Participant Identifier • Send invitations immediately or schedule them • Send reminders to non-responders • Track no response, partial response, and completed response • Review sent and scheduled invitations in the Survey Invitation Log When to use it: • You know participant email addresses in advance • You want one-time unique survey links • You want to track responders and non-responders • You need reminders <i>Important: If you enable Participant Identifier, the survey is no longer anonymous. If participants need to take the same survey more than once, they must be added to the Participant List multiple times so each invitation has its own unique link.</i> <i>Best Practice: Use the Survey Invitation Log when you need to verify what was sent, what is scheduled, what reminders exist, or whether an invitation failed.</i>
Automated Survey Invitations (see Appendix for logic & details)	Logic-based and scheduled invitation workflows. ASIs allow REDCap to schedule and send survey invitations automatically when specified conditions are met. To use an ASI, a survey must already exist, a valid email field must be designated at the project or survey level, and if the project is longitudinal, the correct event must be selected.

	ASI setup includes four component: Composing the message, defining the trigger conditions, defining when to send the invitation, and activating the ASI. ASIs do not work on projects enabled with repeating instruments/events. If no valid designated email field exists, the ASI cannot be delivered even if the logic is correct. When to Use: • Follow-up surveys sent a set number of days after an earlier survey • Event-based invitation workflows in longitudinal projects • Conditional invitations that depend on data values • Repeated reminder schedules for incomplete surveys Manual invitations and ASIs can coexist. If needed, scheduled invitations and reminders can be reviewed and deleted in the Survey Invitation Log.
Survey Queue	Multiple surveys presented in sequence for the same record. The Survey Queue displays surveys for a participant on a single page, like a to-do list, and can control which surveys appear next based on completion status and logic. Key features: • Display logic based on survey completion and branching-like conditions • Optional custom text at the top of the queue • Auto Start to immediately launch the next incomplete survey • Option to keep the queue hidden from participants When to Use: • Participants need to complete multiple surveys in one workflow • The next survey depends on prior answers or eligibility • You want participants guided through a structured sequence How to Setup: Go to Online Designer ➔ Click Survey Queue ➔ Add surveys to the queue ➔ Define conditions for each survey <i>Important: Survey Queue logic is evaluated at the record level, not relative to the current event or repeating instance. Also, Auto-continue in Survey Settings can override Survey Queue behavior, so do not combine them casually.</i>

Best Practice: Use Survey Queue rather than Auto-continue when progression depends on conditions or eligibility. Use Auto-continue only for very simple same-event survey chains.

Public Survey vs. Participant List (Invitations)		
Feature	Public Survey Link	Participant List / Invitations
Main purpose	Open access survey via a shared link	Send individualized survey links via email
Best for	Anonymous or broad distribution	Known participants and tracked responses
Unique links per participant	No (same link for everyone)	Yes (individualized survey links)
Tracks who responded	No (unless you collect identifiers)	Yes (linked to record/participant)
Email invitations	Not built-in	Yes (manual or automated)
Reminder capability	No	Yes (via Invitation Log or ASIs)
Anonymous responses	Yes (default use case)	Optional (depends on configuration)
Typical use case	Open survey posted online or shared broadly	Send baseline + follow-up surveys to enrolled participants
Simple rule: Use a Public Survey Link when you do not need to track who responded. Use the Participant List / Invitations when you need to send		

Survey Queue vs. Automated Survey Invitations (ASIs)		
Feature	Survey Queue	ASI
Main purpose	Controls which survey a participant sees next	Controls when a survey invitation is sent
Best for	Multi-survey navigation and sequencing	Scheduled or logic-based invitation delivery
Sends emails?	No	Yes
Uses logic?	Yes, to decide what appears next	Yes, to decide when invitations are scheduled
Typical use case	Eligibility: Survey → Consent → Baseline Survey	Send follow-up survey 7 days after baseline completion
Simple rule: Use Survey Queue to guide participants through surveys. Use ASI to send surveys automatically.		

Important: If you collect email addresses or identifiers in a public survey to send follow-up surveys, the data is no longer truly anonymous and becomes linked to participant identity.

Decision Tip: If you need broad anonymous access, start with Public Survey Link. If you know who your participants are and need tracking or reminders, use Participant List. If invitations should be triggered automatically, use ASI. If participants need to complete multiple surveys in sequence, consider Survey Queue.

Multi-Survey and Longitudinal Workflows. When you need to send multiple surveys to the same participant over time, REDCap must have a way to tie those responses back to the same record. Common approaches:

- **Public Survey Link + designated email field** – the first survey collects the participant’s email, which populates the Participant List for later invitations
- **Participant List from the start** – participants are invited using known email addresses, and follow-up surveys are sent through additional Participant List invitations or ASIs
- **Longitudinal project + ASIs** – later surveys are triggered after completion of earlier event surveys

Important: In a multi-survey workflow within one project, only participants who completed the earlier required survey and provided the needed linkage information will typically appear for the follow-up survey workflow.

Best Practice: If the workflow depends on the same person completing multiple linked surveys, design the linkage method at the beginning. Retrofitting email capture or participant matching later is messy and error-prone.

General Survey Build and Administration Best Practices

- Choose the survey distribution model before you start building
- Use Public Survey Link only when open access is truly appropriate
- Use Participant List when you need one-time links, reminders, or response tracking
- Use ASIs for automated follow-up, but test logic before activation
- Use Survey Queue for multi-survey workflows, especially when progression depends on conditions
- Use Stop Action thoughtfully and decide whether stop-out responses should be saved
- Protect public surveys with layered safeguards, not just a single setting
- Test every workflow with realistic test records before going live
- Move the project to Production before collecting real data
- Ensure survey design, identifiers, and communications align with the IRB-approved plan
- Protect Public Surveys. Public survey links are useful, but they are also the most vulnerable to bots, invalid responses, repeat submissions, and compensation abuse. Use the following safeguards to protect your public surveys:
 - Use **CAPTCHA** or other challenge-based access controls. Adding CAPTCHA to your public surveys is a quick and easy way to provide additional protection to prevent bots and safeguard your data. In CAPTCHA, a user will first have to complete the CAPTCHA challenge before being allowed to proceed to the survey. The CAPTCHA

has to be completed at most once per user session. The Custom CAPTCHA option could be used to implement simple password protection of a survey. Only users who know the "password" can then access the survey. Depending on your instance, you may have built-in Google reCAPTCHA or an external module such as [nedCAPTCHA](#), which can provide math, image, or custom challenge-response protections for public surveys. CAPTCHA helps, but it is not enough by itself. Public surveys that include incentives or open recruitment need layered protections and active monitoring.

- Consider a response limit to reduce exposure
 - Add challenge or attention-check questions
 - Use hidden honeypot fields to help identify bot activity
 - Review timestamps, response patterns, and anomalous clusters
 - Avoid fully automated compensation workflows
 - Use targeted distribution instead of broad public posting when possible
 - Treat a public survey as the front porch, not the whole house. Use the initial public survey to screen, verify, or triage respondents before moving them deeper into the study workflow.
- Important: Confirmation emails and PDF attachments are generally not recommended for surveys containing identifying information or PHI, because email is not considered a secure communication channel.
 - Keep Survey Settings as simple as possible. Most survey problems come from adding too many features without a clear workflow need.

Final Takeaway: The best REDCap survey workflow is not the one with the most features. It is the one that clearly fits the study design, protects confidentiality, minimizes user confusion, and can be reliably managed by the study team.

Appendix: Automated Survey Invitations (ASIs)

About

Automated Survey Invitations (ASIs) allow REDCap to send survey invitations automatically when specified conditions are met. They are especially useful for follow-up surveys, scheduled outreach, longitudinal workflows, and any study that needs repeatable, rule-based survey distribution.

Unlike manual invitations sent through the Participant List, ASIs do not require a person to send each message individually.

ASIs are commonly used for:

- Follow-up surveys sent after a baseline survey
- Surveys sent after a delay, such as 7 days after enrollment
- Time-based or event-based invitations
- Conditional invitations based on study data

Please note:

- (1) ASIs do not simply “send surveys later.” They work by evaluating logic, scheduling invitations, and then sending them according to the timing rules you define.
- (2) ASIs require careful planning and testing. Poorly designed logic, missing email fields, or incorrect timing assumptions are among the most common causes of survey invitation errors.

Setup Checklist

- ✓ Confirm the survey is enabled
- ✓ Confirm a valid email field is designated
- ✓ Open the correct survey’s ASI setup in Online Designer
- ✓ Write and test the trigger logic
- ✓ Choose the correct send timing
- ✓ Configure reminders only if needed
- ✓ Leave the ASI inactive until testing is complete
- ✓ Activate only after full end-to-end validation

Before You Begin

Before setting up an ASI, make sure the following are already in place:

- The instrument is enabled as a survey
- A valid email field has been designated at the project or survey level
- The survey workflow and trigger conditions are fully planned
- If the project is longitudinal, you know which event the invitation belongs to
- Note:
 - ASIs do not work on projects enabled with repeating instruments/events.

- If no valid designated email field exists, the ASI cannot be delivered even if the logic is correct.

How ASIs Work

Every ASI consists of three core parts:

1. Compose the invitation – subject line and message
2. Define the trigger condition – what must happen for REDCap to schedule the invitation
3. Define when to send – immediately, after a delay, or relative to a date/date-time field

Once the trigger condition becomes true, REDCap schedules the invitation. A separate process then sends it at the appropriate time.

The trigger condition determines when the invitation gets scheduled. The timing setting determines when the scheduled invitation is actually sent.

ASI Setup Steps

To configure an ASI:

1. Go to Online Designer
2. Click Automated Invitations for the appropriate survey
3. If the project is longitudinal, select the correct event
4. Complete the four ASI requirement by following these steps:
 - **Step 1: Compose message:**
 - Select the sender address
 - Enter the subject line
 - Enter the message body
 - Keep the survey-link smart variable intact

Important: The survey link in the invitation is a smart variable and must remain in the correct format. Once the invitation is scheduled, REDCap resolves that text into the participant's unique private survey link.

- **Step 2: Define Conditions.** Specify the condition that tells REDCap when the invitation should be scheduled. Examples include:
 - When a prior survey is completed
 - When a field is populated
 - When a calculated logic expression evaluates as true
- **Step 3: When to Send.** Specify whether the invitation should be sent immediately, on the next chosen day/time, after a specific delay, or relative to a date/date-time field.
- **Step 4: Activated.** Save the ASI while it is inactive during setup and testing. Activate it only after the logic and timing are fully validated.

Best Practice: Keep ASIs inactive during development and use realistic test records before activation.

Writing ASI Logic

ASI logic can be simple or complex, but it should always be intentional, readable, and testable.

General guidance

- All fields in all forms and arms are available to ASI logic
- If a field has no value, REDCap treats it as an empty string
- For longitudinal projects, include the event reference when needed
- Use a dedicated “kill switch” field to stop invitations when needed

Example kill switch logic:

```
datediff([surgery_arm_2][surgery_date], 'today', 'd', true) >= 6 and  
[enrollment_arm_1][prevent_surveys] != '1'
```

The `datediff()` function is often used in ASIs to trigger invitations based on elapsed time between dates. It is especially useful when invitations depend on a visit date, surgery date, or other participant-specific date field.

Design Tip: It is often easier to validate complex ASI logic first in a custom report or Data Quality rule, then copy that working Boolean logic into the ASI.

Important: The today variable should generally be used with `datediff`. Comparing today directly to a date field is unreliable. `:contentReference[oaicite:9]{index=9}`

Scheduling and Timing Options

Once the trigger condition is fulfilled, ASIs can be sent in several ways, including, immediately, next day/time, after X days/hours/minutes, or relative to a date or date-time field.

Examples include sending the ASI 7 days after baseline completion, 14 days before a surgery date, or the next Monday at 9:00 AM.

When sending based on participant-specific dates, date-validated or datetime-validated fields can be used in the timing options.

Best Practice: If you need a survey sent at a specific time of day, use logic that triggers before the target day and then schedule the send time explicitly, rather than waiting until the exact target day to trigger it.

Important: Calendar/Event dates from the REDCap calendar application cannot be used directly in ASI logic. `:contentReference[oaicite:11]{index=11}`

Reminders

ASI reminders can be enabled to re-send invitations if the participant has not completed the survey.

Please note that:

- Reminders are optional
- They can be configured with their own timing rules
- The maximum is five reminder (original invitation + four reminders)

Tip: Participants with partially completed surveys can still receive ASI reminders if the survey is not complete. :contentReference[oaicite:13]{index=13}

Important: To stop reminders, first change the ASI so no more reminders are scheduled, then delete any already scheduled reminders from the Survey Invitation Log.

Longitudinal Projects

In longitudinal projects, ASI logic often needs to reference fields from events other than the current event. When this is the case, prepend the variable with the unique event name:

[unique_event_name][variable_name]

Unique event names can be found in **Project Setup → Define My Events**.

Important: If you omit the event reference when the field is from a different event, the ASI may not behave as expected.

Re-evaluating ASIs

REDCap includes a Re-evaluate Automated Invitations option that can manually trigger ASI logic. This is useful when:

- The ASI was created after records already existed
- Existing records were updated and may now meet the logic
- You need to catch records that should have had invitations scheduled earlier

Important: Re-evaluating ASIs does **not** change invitations that are already scheduled. It only schedules invitations that have not yet been scheduled, and may unschedule invitations if the logic is no longer true when “Ensure logic is still true” is in use.

Tip: Re-evaluation is especially helpful for older records, but it should be used carefully in large projects because it can affect many records at once.

Key Limitations and Cautions

- ASIs do not work with repeating instruments/events
- ASIs do not retroactively fire for existing records unless re-evaluated

- Once an ASI fires for a record, changing the logic later does not make it fire again automatically
- Piped values in the invitation are captured when the invitation is scheduled, not when it is eventually sent
- Manual invitations and ASIs can both be used, so duplicate outreach is possible if workflows are not carefully designed

Important: If a survey has already been completed, REDCap will not send a scheduled invitation for that already completed survey, even if one had previously been scheduled.

Best Practices

- Use a dedicated stop-emails or prevent-surveys field as a kill switch
- Write logic that is readable and testable
- Test with realistic records before activation
- Be explicit about timing assumptions, especially when using date and date-time fields
- Keep reminders intentional rather than automatic by habit
- Use the Survey Invitation Log to monitor scheduled and sent invitations
- Document ASI workflows for the study team so everyone understands what is automated and what is manual

Final Takeaway: A successful ASI setup is not just about getting the invitation to send. It is about ensuring the **right survey** goes to the **right person** at the **right time**, under the **right conditions**, without creating confusion or duplicate outreach.