



# REDCap: Calculated Fields



Information from Vanderbilt University REDCap Built in Support

Information compiled by the Biostatistics Core  
Rhode Island Hospital, Lifespan

# Calculated Fields

A calculated field has the ability to make real-time calculations on data entry forms.

**Calculated fields should be thought of as a tool rather than a form of data collection/manipulation.**

They should be used when it is necessary to know the calculated value while on that page or when the result of the calculation affects **data entry workflow (branching logic)**.

Example:

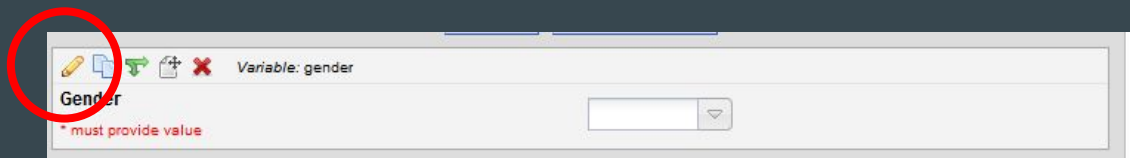
**Data Collection:** Using a BMI calculation as a patient outcome

vs

**Tool Use:** Using a BMI calculation as a means to split your survey respondents between two separate series of questions. I. e. Questions specific to those that have a very low or very high BMI.

**For this reason, it is recommended that 'calc' field types are not excessively utilized on REDCap data collection instruments.**

# Avoid Blank Fields



Variable: gender

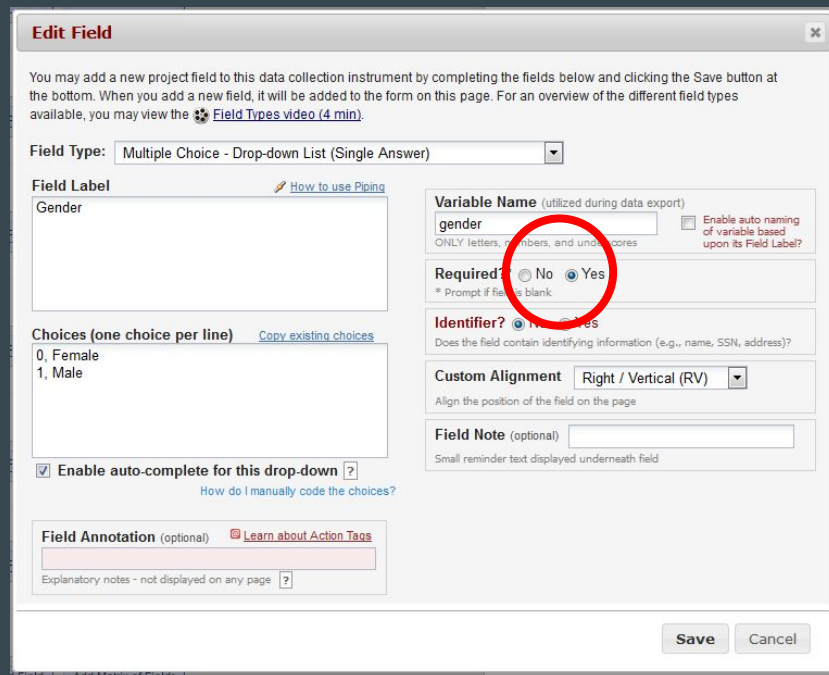
Gender

\* must provide value

When using a calculation, Blank fields are not easily interpreted.  
When using a calculated field, **AVOID MISSING** fields in the calculation! Make ALL input fields for the calculation required of the respondent or you can get unintended results.

## Required Fields:

When you're in your project, press the "Online Designer" button or click on the "Edit Instruments" link, and then select the appropriate link to your instrument. Click on the "pencil" icon of the field you wish to make required and the Edit Field dialog will be displayed.



**Edit Field**

You may add a new project field to this data collection instrument by completing the fields below and clicking the Save button at the bottom. When you add a new field, it will be added to the form on this page. For an overview of the different field types available, you may view the [Field Types video \(4 min\)](#).

Field Type: Multiple Choice - Drop-down List (Single Answer)

Field Label: Gender

Variable Name: gender

Required:  No  Yes

Identifier?  Yes  No

Custom Alignment: Right / Vertical (RV)

Field Note (optional):

Field Annotation (optional):

Explanatory notes - not displayed on any page

Save Cancel

# Blank Fields and Logic

It is not always realistic to make a field required; however, there are alternatives. We can also use logic.

We can assign values to blank fields or indicate we only want to display a calculated field when the necessary values are defined (highly recommended).

Example Syntax:

If ( **condition**, trueValue, falseValue )

If ( ( [ field\_a ] = "NaN" ) or ( [ field\_b ] = "NaN" ), null, [ field\_a ] / [ field\_b ] )

Null or blank fields can be referred to as "NaN".

# Importance of Parenthesis

When using a calculation or logic in REDCap use of appropriately **paired parenthesis** is critical.

Example: Conditional logic is used with a calculated score from a patient survey

**Wrong:** `if([var_a]>0,"NaN",sum([var_b] +[var_c]+[var_d]))*5`

The multiply by 5 is outside the whole if function, in this case REDCap will multiply a blank ("NaN") by 5 and will assign a value of 0 instead of blank to the score. Red shows the parenthesis that 5 is multiplying and green shows the patient sum.

vs

**Correct:** `if([var_a]>0,"NaN",sum([var_b] +[var_c]+[var_d]))*5`

In this new equation the multiplication of 5 is only applied to the patient sum score not to the entire if statement.

# For Further Reading...

When editing a calculated field, click the link for “How do I format the equation?”

Or the Help & FAQ tab in your main REDCap screen.



- [Home](#)
- [My Projects](#)
- [Create New Project](#)
- [Training Resources](#)
- [Help & FAQ](#)
- [Send-It](#)
- [Control Center](#)

HOW TO SEARCH THIS PAGE:  
To search for a keyword on this page, use Ctrl+F (or Command+F) on your keyboard.

## REDCap Help & FAQ

- General
  - Mobile Devices
  - What can REDCap Administrators do that REDCap end users can't?
  - Language Modules
  - Licensing
- Project Setup / Design
  - Surveys
  - Longitudinal
  - Copy A Project
- Data Collect Instrument (DCI) Design

### Edit Field

You may add a new project field to this data collection instrument by completing the fields below and clicking the Save button at the bottom. When you add a new field, it will be added to the form on this page. For an overview of the different field types available, you may view the [Field Types video \(4 min\)](#).

Field Type:

Question Number (optional)

Field Label [How to use Piping](#)

Calculation Equation [How do I format the equation?](#)  
`if ((( [sofa_pao2] = "NaN" ) or ( [sofa_fio2] = "NaN" ) )  
null, [sofa_pao2] / [sofa_fio2] )`

Field Annotation (optional) [Learn about Action Tags](#)  
  
Explanatory notes - not displayed on any page

Variable Name (utilized during data export)  
  Enable auto naming of variable based upon its Field Label?  
ONLY letters, numbers, and underscores

Required?\*  No  Yes  
\* Prompt if field is blank

Identifier?  No  Yes  
Does the field contain identifying information (e.g., name, SSN, address)?

Custom Alignment

Field Note (optional)   
Small reminder text displayed underneath field