**Garmin Connect & Fitabase**

1. Login to Fitabase (<https://fitabase.com/>)
2. Select Project
3. Connect new devices to Fitabase from Garmin Connect (if needed)
   1. Go to Garmin Connect (left panel) > Connect Garmin Device (located in top right)
      1. Input Participant ID
      2. Input data collection start/end dates of desired data for export
      3. Save Changes
   2. Sign in with Garmin Connect login
   3. Allow sharing of Activities and Daily Health Stats > Save > Agree (takes a moment to load)
   4. Repeat steps a-c for all participants
4. Update current participants (if needed)
   1. Go to Participants (left panel)
   2. Select participant
   3. Go to Syncing
      1. Update sync dates
5. Apply tags to all participants
   1. Go to Tags (left panel) > Manage Tags (top right) > New Tag
      1. Create new tag and Save
   2. Select participants to apply tag to
   3. Click drop-down (top) > Apply tags
      1. Select tag to apply and Save

**Data Export from Fitabase**

1. Login to Fitabase (<https://fitabase.com/>)
2. Go to Exports (left panel) > Create New Batch Download (top right)
   1. Export Name: input name
   2. Tags: Select tag (chooses participants to export)
   3. Input Start and End dates
   4. Select files to download (see below for description of files)
   5. Choose Individual or Merged Data Files
      1. Individual: exports one file by parameter per participant (helpful for long data collections to support epoch-by-epoch data that may exceed the entire .CSV row capacity)
      2. Merged: combines all participants on one file (helpful for short data collections)
   6. Click “Create” (bottom right)
3. Once processing is complete, click “Download” (Individual or Merged options)
   1. **Individual (by-participant) files allow greater flexibility for subsequent processing (see https://github.com/edf37/GarminProjects.git)**
4. Extract by zip files to desired folder

**Cleaning Procedures**

* Verify data is showing accurately on Fitabase prior to exporting
* Check that all subjects have been exported
* Check that all dates have been exported for each participant
  + Consider ‘drop’ dates or non-wear dates or if the watch did not record.
* Check that blanks or “0” values are accurate to data in the device account
* Spot-check specific values with data in the device account to check the accuracy of data
* Discrepancies between Fitabase and Garmin Connect can be corrected from Fitabase Support.

**Export Files**

* Activity Files – Data Outputs when Activities Recorded
  + - Variables: Active & BMR kcals, Steps, Distance (m), Duration (sec), Active Time (sec), Moderate & Vigorous Intensity Duration (sec), Min/Max/Avg/Resting HR (bpm), Steps Goal, Intensity Duration Goal (sec), Floors Climbed, Floors Climbed Goal
* Activity Detail Laps – data outputs for recorded activities if a lap was initiated
  + Variables: Activity ID, Lap Start Time
  + Variables: Activity ID, Start Time, Elevation (m), Air Temp (C), HR, Speed (m/s), Steps/Min, Total Distance (m), Timer/Clock/Moving Duration (sec), Power (W), Bike Cadence (rpm), Swim Cadence (strokes/min)
    - TimerDurationInSeconds: The amount of “timer time” in an activity
    - ClockDurationInSeconds: The amount of real-world “clock time” from the start of an activity to the end
    - MovingDurationInSeconds: The amount of “timer time” during which the athlete was moving (above a threshold speed; not supported for pool swimming activities)
* Activity Detail Summary – data outputs by recorded activity started by participants
  + From Fitabase: “Fitness activity details summaries represent detailed information about discrete fitness activities, such as running or swimming, that are specifically and intentionally started by the user on their device. All wellness data, like steps and distance, contained in the activity are already represented in the Daily summary and in the corresponding Epoch summaries, so Activity Detail summaries should only be used for programs that wish to treat specific activity types in different ways, such as giving the user extra credit for going swimming three times in the same week.”
  + Variables: Activity ID & Type, Start Time, Avg/Max Bike Cadence (rpm), Avg/Max HR (bpm), Avg/Max Run Cadence (steps/min), Avg/Max Speed (m/s), Avg Swim Cadence (strokes/min), Avg Pace (min/km), Active kcals, Device Name, Distance (m), Duration (sec), # Active Lengths, Steps, Elevation Gain (m), Manual
* Activity Logs – data outputs by recorded activity
  + Variables: Activity ID, Start Time, Duration (sec), IsParent, Elevation Gain/Loss (m), Steps, # Active Lengths, Max/Avg Speed (m/s), Max/Avg Run Cadence (steps/min), Max/Avg Pace (min/km), Max/Avg HR (bpm), Max/Avg Bike Cadence (rpm), Distance (m), Device Name, Active kcals, Avg Swim Cadence (strokes/min), Activity Type, Parent Summary, Manual
* Body Composition – data outputs by each logged body weight
  + Variables: Activity Date/Time, Muscle Mass (g), Bone Mass (g), Body Water (%), Body Fat (%), BMI, Weight (g)
    - Note: for data from watches, only weight is measured
* Epoch – data outputs by 15 min
  + Variables: Steps, Distance (m), Active kcals, Duration (sec), MET min, MET avg
* Epoch Log – data outputs by 15 min
  + Variables: Activity Type, Active kcal, Distance (m), Duration (sec), Active Time (sec), Met, Intensity, Mean & Max Motion Intensity
* Heart Rate – data ouputs by 15 sec
  + Variables: HR
* Move IQ – data outputs by each activity
  + Variables: Duration, Activity Type, Activity Subtype
* Pulse Ox
* Sleep – data outputs by night
  + Variables: Date, Deep Sleep/Light Sleep/Awake/Unmeasurable/REM Sleep Duration (sec), Validation, Summary ID
* Sleep Details – data outputs by sleep stage
  + Variables: Summary ID, Date & Time, Sleep Stage, Duration, Validation
* Stress – data outputs by day
  + Variables: Date/Time, Avg Stress Level, Max Stress Level, Stress Duration (s), Rest, Activity, Low, Mid, High Stress Duration (s), Stress Qualifier
* Stress Details – data outputs by 3 min
  + Variables: Date, Time Zone Changed This Day, Stress Level Value
* User Metrics
* Wear Time Via HR – outputs data by day wherein participant wore the device detected by PPG
  + Variables: Date, Total Wear Time (min, % of day)