

The background features a vibrant blue gradient. At the top, there are several light blue, stylized clouds of various shapes. At the bottom, there is a silhouette of a city skyline with various buildings in shades of white and light blue. The text is centered in the middle of the image.

Activities of Daily Living (ADL)

What are ADLs and how are they used in Healthcare?

Definition...

Activities of daily living (ADLs or ADL) is a term used in healthcare to refer to people's **daily** self care **activities**. Common ADLs include feeding ourselves, bathing, dressing, grooming, work, homemaking, ambulation, cleaning oneself after defecating and leisure.

Basic ADLs

Consist of self care task.

Instrumental ADLs

Not fundamental but allows an individual to live independently in a community.

- Shopping, Playing, etc.

ADL is a standard metric used to quantify a person quality of life often after experiences a medical procedure. The goal is to find better ways to score a person's performance to more accurately evaluate their outcome! Focusing on keeping people independent.



DARI has the ability to quantify function like never before for ADLs!

Let's demonstrate the capabilities and applications

DARI capabilities.

- Utilizing the DARI database we are able to find how different data points inside movements statistically compare to age. Now, we have a focused data approach to better understand expectations for ADL with a precise measurement tool.

Past Research.

Multi studies have been done utilizing motion capture data to give us an initial understanding of patient expectations. We can utilize their learnings and apply it to our reporting logic.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4690598/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5537477/>

In healthcare this style of testing is being used more regularly and has more research coming out over the last 3 years supporting it as a strategy to document patient outcomes.

What are the next steps to communicate ADL through DARI?

Data Science.

DARI's statistical approach will allow us to rate a movement based on "what" the person did (performance-based outcome).

Additionally, we will be able to supplement the scoring with attributes of "how" they movement. (vulnerability).

ADL Research.

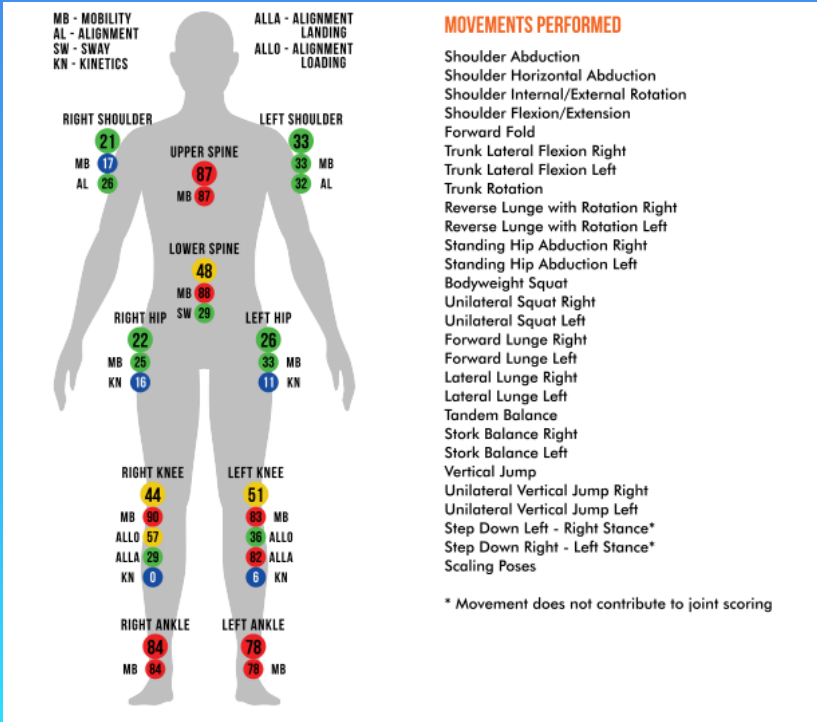
After reviewing the movements currently done for a standard ADL you quickly notice that subjective approval metrics are used widely for different task. DARI will work to transform those movements to remove subjective judgements.

Example – what squat depth is needed to get functionally get off a toilet?

Feedback.

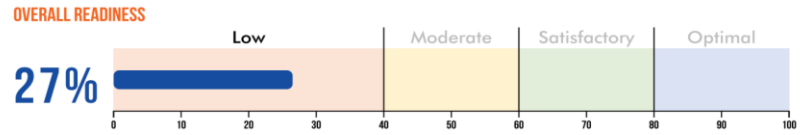
Each ADL is complemented with a standard questionnaire. This information easily collected and continually applied to our data science approach to further the insight extrapolation.

Visualization of an ADL protocol through DARI



- MOVEMENTS PERFORMED**
- Shoulder Abduction
 - Shoulder Horizontal Abduction
 - Shoulder Internal/External Rotation
 - Shoulder Flexion/Extension
 - Forward Fold
 - Trunk Lateral Flexion Right
 - Trunk Lateral Flexion Left
 - Trunk Rotation
 - Reverse Lunge with Rotation Right
 - Reverse Lunge with Rotation Left
 - Standing Hip Abduction Right
 - Standing Hip Abduction Left
 - Bodyweight Squat
 - Unilateral Squat Right
 - Unilateral Squat Left
 - Forward Lunge Right
 - Forward Lunge Left
 - Lateral Lunge Right
 - Lateral Lunge Left
 - Tandem Balance
 - Stork Balance Right
 - Stork Balance Left
 - Vertical Jump
 - Unilateral Vertical Jump Right
 - Unilateral Vertical Jump Left
 - Step Down Left - Right Stance*
 - Step Down Right - Left Stance*
 - Scaling Poses

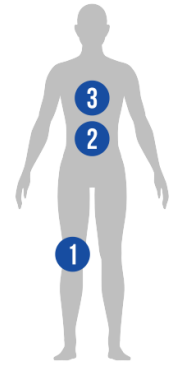
* Movement does not contribute to joint scoring

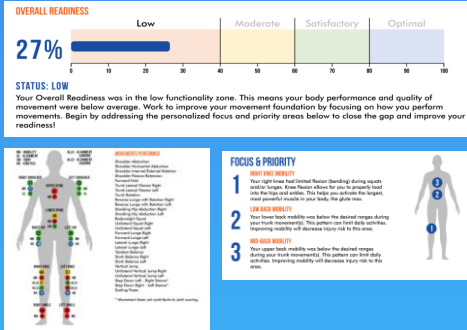


STATUS: LOW
 Your Overall Readiness was in the low functionality zone. This means your body performance and quality of movement were below average. Work to improve your movement foundation by focusing on how you perform movements. Begin by addressing the personalized focus and priority areas below to close the gap and improve your readiness!

FOCUS & PRIORITY

- RIGHT KNEE MOBILITY**
 Your right knee had limited flexion (bending) during squats and/or lunges. Knee flexion allows for you to properly load into the hips and ankles. This helps you activate the largest, most powerful muscle in your body, the glute max.
- LOW BACK MOBILITY**
 Your lower back mobility was below the desired ranges during your trunk movement(s). This pattern can limit daily activities. Improving mobility will decrease injury risk to this area.
- MID-BACK MOBILITY**
 Your upper back mobility was below the desired ranges during your trunk movement(s). This pattern can limit daily activities. Improving mobility will decrease injury risk to this area.





Impact Decisions



THE BARTHEL INDEX

Patient Name: _____
 Room Number: _____
 Date: _____

Activity: _____ Score: _____

FEEDING
 1 = needs help eating, swallowing, hot/cold, etc., or requires modified diet
 2 = independent

BATHING
 1 = dependent
 2 = independent

DRESSING
 1 = needs help with personal care
 2 = independent for both hands

CONTINENCE
 1 = dependent
 2 = needs help from the onset of urination/defecation to the end of voiding

TRANSFERS (UP TO CHAIR)
 1 = needs some help, but can do it independently with help of 1 or 2 people
 2 = needs no help

WALKING (UP TO 300 FT)
 1 = needs some help, but can do it independently with help of 1 or 2 people
 2 = needs no help

STAIRS
 1 = needs help with both feet
 2 = independent

Katz Index of Independence in Activities of Daily Living

| ACTIVITIES (POINTS 0-5) | INDEPENDENCE (1 POINT) | DEPENDENCE (2 POINTS) |
|-------------------------------------|---|--|
| BATHING POINTS: _____ | NO assistance needed in personal activities | NO assistance needed, personal activities in the tub |
| DRESSING POINTS: _____ | 1) POINTS: Clothes can be completely self-dressed, but may require help with fasteners (e.g., buttons, zippers, etc.) | 1) POINTS: Needs help with dressing and/or needs to be completely dressed |
| TOILETING POINTS: _____ | 1) POINTS: Goes to toilet, gets on and off, manages clothes, when possible uses self-help aids. | 1) POINTS: Needs help transferring to the toilet, cleaning up, or some degree of assistance. |
| TRANSFERING POINTS: _____ | 1) POINTS: Moves in and out of bed or chair unassisted. Reclining/transferring when not acceptable. | 1) POINTS: Needs help in moving from bed to chair or requires a complete transfer. |
| CONTINENCE POINTS: _____ | 1) POINTS: Continence complete and under most conditions and circumstances. | 1) POINTS: Incontinent or needs briefs/underwear all time or in bed. |
| FEEDING POINTS: _____ | 1) POINTS: Can feed themselves with or without self-help, independent of food may be eaten by another person. | 1) POINTS: Needs partner or other help with feeding or requires specialized feeding. |

TOTAL POINTS: _____ (1 = High patient dependence; 5 = Low patient dependency)

Document Outcomes

Combination of Objective + Subjective = Full Experience
driving next version insights



Activities of Daily Living (ADL)

