

# The Alberta Moving Beyond Breast Cancer (AMBER) Cohort Study: Recruitment, Assessment, and Description of the First 1090 Participants

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## BACKGROUND

To our knowledge, the Alberta Moving Beyond Breast Cancer (AMBER) study is the first and only prospective cohort study of breast cancer survivors that includes objectively-measured physical activity (PA), sedentary behavior, health-related fitness (HRF), and biologic mechanisms focused on understanding breast cancer outcomes.

## OBJECTIVES


The purpose of the present study was to report on the feasibility of recruitment, baseline measurement completion, and the representativeness of the first 1090 participants.

## METHODS

### Participants

- Incident, histologically-confirmed stage I ( $\geq T1c$ ) to IIIc breast cancer, Completion of the revised Physical Activity Readiness Questionnaire for Everyone (PAR Q+)
- Breast cancer cases identified through Alberta Cancer Research Biobank (Calgary) and Cross Cancer Institute (Edmonton)
- Alberta resident, <80 years of age, not pregnant, female

### Data Collection

- One or two clinic visits involve: (1) administration of questionnaires and activity monitors (ActiGraph GT3X<sup>®</sup> and activPAL<sup>®</sup>), (2) completion of health-related fitness testing (cardiorespiratory fitness, upper/lower body strength/endurance, flexibility)  (3) anthropometrics/DXA scans, (4) lymphedema/upper body function
- Blood samples collected pre/post-surgery (pre-surgery preferred)
- Medical chart abstraction completed for staging, treatments, co-morbidities, new cancers, recurrences/progression data.
- Abovementioned measurements are repeated at 1 and 3 years post-diagnosis. Questionnaires only repeated at 5 years post-diagnosis.

## RESULTS

11,196 newly diagnosed breast cancer survivors in Calgary, Edmonton, and surrounding areas screened for eligibility in AMBER

- 7677 (69%) ineligible for AMBER
- Unavailable through biobank (n=2926)
  - Ineligible disease stage (n=2157)
  - Medical/age (n=1543)
  - Out of town/distance (n=603)
  - Previous cancer (n=124)
  - Language (n=188)
  - Already on treatment (n=90)
  - Other (n=45)

3519 (31%) eligible for AMBER

- 2370 declined AMBER
- Overwhelmed/too sick (n=911)
  - Not interested (n=755)
  - Out of town/distance (n=408)
  - Unable to contact (n=212)
  - Other (n=84)

1149 (33%) recruited to AMBER  
(1090 completed baseline assessments and clean data)

Figure 1. Flow of recruitment in the AMBER study, Alberta, 2012-September 2017.

## RESULTS

Table 1. Baseline descriptive characteristics of the first 1090 participants in the AMBER study, Alberta, 2012-June 21, 2017.

Baseline characteristics	Calgary (n=582)	Edmonton (n=508)	Total (n=1090)
Age at diagnosis (n=1090)	56.6 ± 11.3	54.7 ± 10.3	55.7 ± 10.9
Marital status (n=1084)			
Married/common law	417 (71.9%)	386 (76.6%)	803 (74.1%)
Not married	163 (28.1%)	118 (23.4%)	281 (25.9%)
Education (n=1062)			
≤High school	123 (22.0%)	117 (23.3%)	240 (22.6%)
≥University	436 (78.0%)	386 (76.7%)	822 (77.4%)
Ethnicity (n=1038)			
Caucasian	462 (84.6%)	397 (80.7%)	859 (82.8%)
Other	84 (15.4%)	95 (19.3%)	179 (17.2%)
Menopausal status (n=1034)			
Premenopausal	204 (37.0%)	191 (39.6%)	395 (38.2%)
Postmenopausal	348 (63.0%)	291 (60.4%)	639 (61.8%)
First degree family history of breast cancer (n=1056)			
≥ one first degree relative	158 (28.0%)	113 (23.0%)	271 (25.7%)
No first degree relatives	406 (72.0%)	379 (77.0%)	785 (74.3%)
Cancer stage (n=1090)			
I ( $\geq T1c$ )	261 (44.9%)	223 (43.9%)	484 (44.4%)
II	281 (48.3%)	228 (44.9%)	509 (46.7%)
III	40 (6.9%)	57 (11.2%)	97 (8.9%)
Weight, kg (n=1090)	73.6 ± 15.5	73.8 ± 16.0	73.7 ± 15.7
Body mass index, kg/m <sup>2</sup> (n=1090)	27.5 ± 5.5	27.5 ± 5.7	27.5 ± 5.6
Normal weight (< 25 kg/m <sup>2</sup> )	219 (37.6%)	202 (39.8%)	421 (38.6%)
Overweight (25-30kg/m <sup>2</sup> )	197 (33.9%)	172 (33.9%)	369 (33.9%)
Obese (>30 kg/m <sup>2</sup> )	166 (28.5%)	134 (26.4%)	300 (27.5%)

Values are means ± SD or n (%) within each study site and overall.

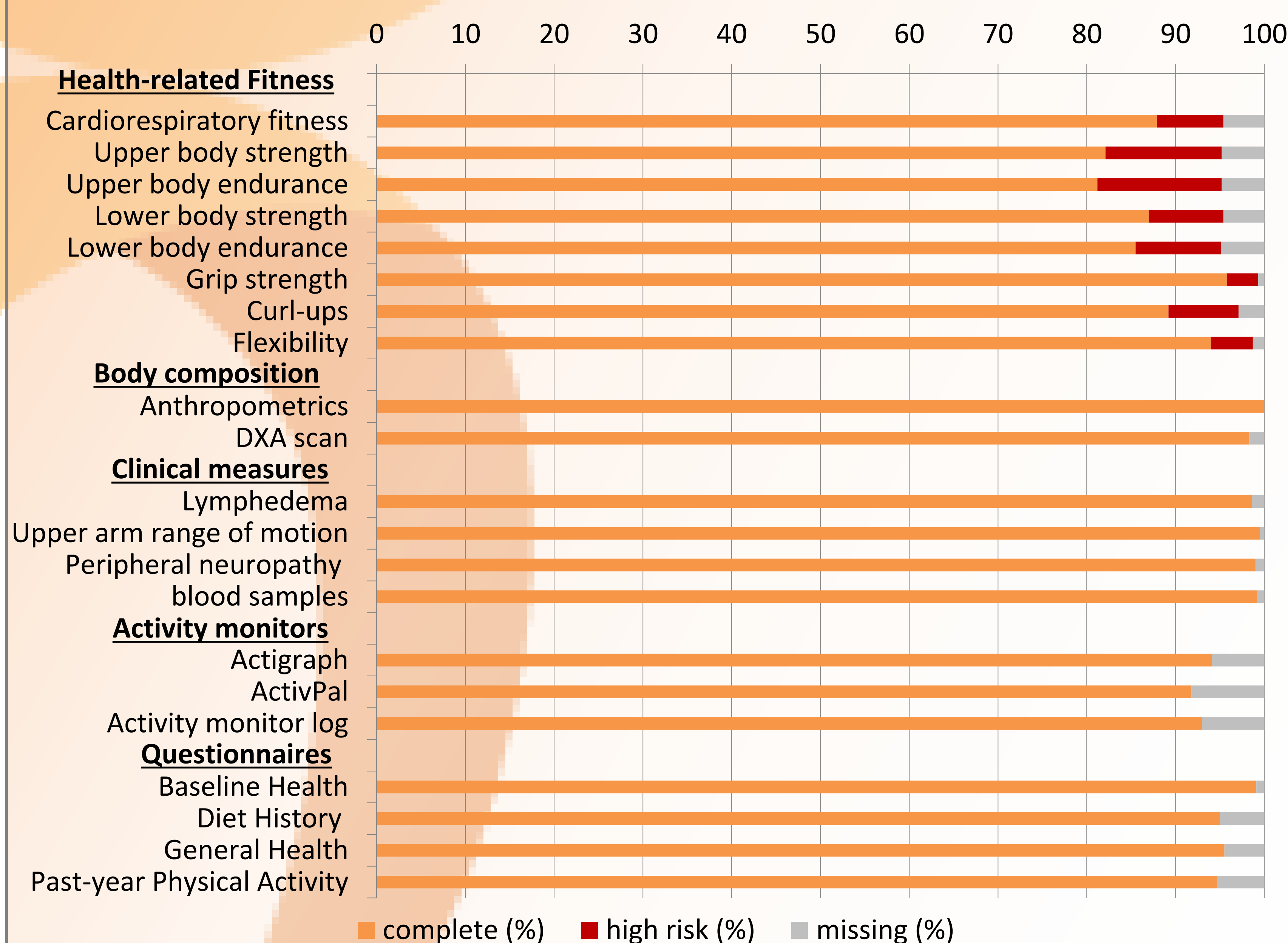


Figure 2. Baseline assessment completion rates for the first 1090 participants in the AMBER Cohort Study, Alberta, 2012-2017 (June 21, 2017).

**High risk**=This designation is made based on the exercise physiologist's assessment that the participant was not able to complete the health-related fitness assessment for any medical or well-being reason. **Missing**=This designation is made when the participant did not come in for health-related fitness testing or they did not complete/return their questionnaires or devices.

## CONCLUSION

AMBER has demonstrated that newly diagnosed breast cancer survivors are willing and able to complete sophisticated and physically demanding HRF and PA assessments. AMBER is a unique breast cancer survivor cohort that may inform future randomized controlled trials on lifestyle and breast cancer outcomes.

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