Anthropometric Characteristics of Contemporary Male Combat Soldiers in the Israel Defense Forces

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Abstract

Background: Accurate anthropometric data are essential for sizing military equipment, designing personal protective equipment, and supporting human-systems integration. The last anthropometric survey of Israel Defense Forces (IDF) soldiers was conducted three decades ago. This study characterizes contemporary male IDF combat soldiers and compares findings with historical cohorts and international studies.

Methods: A cross-sectional anthropometric survey was conducted among active-duty Israel Defense Forces (IDF) personnel between 2021 and 2024. The present analysis was limited to 253 male IDF combat soldiers after initial combat training. Twelve anthropometric dimensions were analyzed. Descriptive statistics and population percentiles (5th, 50th, 95th) and bootstrap 95% confidence intervals based on 2000 resamples were calculated. Findings were compared with historical IDF surveys conducted in 1974, 1986, and 1997, and with the United States Army Anthropometric Survey II (ANSUR II) database.

Results: Mean stature was 176.2 cm (SD=6.6), mean body mass was 72.5 kg (SD=8.9), and mean body mass index (BMI) was 23.3 kg/m² (SD=2.5). Relative to the 1974 cohort, stature, body mass, and BMI increased by 3.1%, 11.8%, and 5.2%, respectively. Although the stature distribution was similar to ANSUR II, the contemporary IDF cohort showed substantially lower body mass and smaller circumferential and appendicular dimensions, with large effect sizes across several mass-based and circumferential measures.

Conclusions: Contemporary male IDF combat soldiers are taller and heavier than historical IDF cohorts but leaner than U.S. Army personnel; similar stature does not imply equivalence across other operationally relevant body dimensions. These differences may affect military equipment design, sizing, and procurement.

Keywords: Military anthropometry; Israel Defense Forces; Combat soldiers; Human-systems integration; Body armor; Equipment design; Secular trends; ANSUR II

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Introduction

Anthropometric characteristics are critical determinants of human-equipment interaction, directly influencing fit, mobility, comfort, and functional performance in operational environments [1,2]. Anthropometric databases additionally serve as foundational inputs for digital human modeling and ergonomic simulation systems used in modern military equipment design [3]. In military settings, anthropometric data inform the design of personal protective equipment (PPE), load-bearing systems, military apparel, vehicle workspaces, and human-machine interfaces [1,4]. Appropriate anthropometric accommodation supports optimized range of motion, reduced physical burden, and improved operational effectiveness. In contrast, poorly fitted equipment has been associated with impaired task performance, restricted mobility, diminished pulmonary function, altered muscle activation patterns, and elevated injury risk [1,4].

Modern military systems are therefore developed using large-scale anthropometric datasets intended to represent the target population's dimensional distribution [2]. However, anthropometric profiles vary substantially across populations and change over time due to demographic, environmental, nutritional, and occupational influences [5,6]. Secular changes in body dimensions have been documented across multiple military populations. Historical datasets therefore become less representative of contemporary service members over time [5]. Consequently, reliance on outdated or non-population-specific anthropometric references may result in systematic mismatch between equipment design assumptions and the morphology of the users [1,2].

Military populations are not anthropometrically equivalent to civilian populations or to one another [5,7]. Combat soldiers represent a physically selected occupational population exposed to unique physiological and operational demands, further emphasizing the importance of population-specific anthropometric characterization [1].

The Israel Defense Forces (IDF) conducted anthropometric surveys between the 1970s and 1990s, documenting secular changes in body dimensions across Israeli soldiers [8]. To our knowledge, no recent characterization of contemporary male IDF combat soldiers has been published since the 1997 survey. During this interval, demographic composition, nutritional environments, and body size distributions within the Israeli population have continued to change [6]. This broader national context is also reflected in large-scale Israeli pre-service screening data, which have shown a secular rightward shift in adolescent BMI distribution and a rising prevalence of overweight and obesity over time [9]. Current IDF equipment procurement and PPE sizing systems may therefore continue to rely on anthropometric assumptions that no longer accurately represent the contemporary combat soldier population. Accordingly, this study provides a contemporary anthropometric characterization of male IDF combat soldiers using standardized military anthropometric methodology. It evaluates the operational relevance of current body dimensions for military equipment design and procurement within the IDF.

Methods

Study Design

This cross-sectional anthropometric survey was conducted between 2021 and 2024 among active-duty IDF personnel. This analysis is one component of a broader, ongoing IDF anthropometric survey that includes both male and female military populations. This study included 253 male combat soldiers in mandatory service who had completed initial combat training and were at least 2.5 months into their enlistment.

Participants

Participants were within the typical IDF conscription age range (18–22 years). We recruited participants using a nonrandom convenience sampling approach due to operational, technical, and logistical constraints. We conducted measurements during scheduled field research days at several military bases within the participating units. We included all soldiers present on the measurement day who met the inclusion and exclusion criteria. We sampled from four combat units: Paratroopers (n=169, 66.8%), Yahalom (n=49, 19.4%), Arayot Hayarden (n=26, 10.3%), and Lavi HaBika (n=9, 3.6%). We initially recruited 254 participants.

One discontinued participation immediately after enrollment because of scheduling constraints, leaving 253 participants in the final analytic cohort. The present analysis excluded female soldiers. The IDF Human Use Committee approved the study (IRB No. 2034-2019), and all soldiers signed an informed consent form before participating. Inclusion criteria were active-duty soldiers in mandatory service after completion of initial training. Exclusion criteria were injury or illness that prevented standing or sitting, injury or illness that prevented skin contact or access to a body region required for measurement, and injury or illness that caused a temporary alteration in body dimensions.

Anthropometric Measurement Protocol

The measurement protocol was adapted from the 2012 U.S. Army Anthropometric Survey (ANSUR II), a standardized and widely used framework for military anthropometric data collection [2,10]. Measurements were conducted at military training facilities. Participants were measured barefoot and in minimal clothing.

Twelve anthropometric dimensions relevant to military equipment design and human-systems integration were analyzed according to standardized military anthropometric methodology [1,2]. Variables included: body mass (kg), stature (cm), calculated body mass index (BMI, kg/m²), head circumference (mm), neck circumference (mm), chest circumference (mm), waist circumference (mm), biacromial breadth (mm), arm span (mm), hand length (mm), hand breadth (mm), and foot size. Foot size was recorded as American shoe size equivalent and converted to estimated foot length for comparative analyses [11]. Body mass is reported in kg, BMI in kg/m², stature in cm, and all other linear and circumferential dimensions in mm.

Comparative Datasets

The primary international comparator dataset was the U.S. Army Anthropometric Survey II (ANSUR II), conducted between 2010 and 2012 among 4082 male U.S. Army personnel [2]. ANSUR II is the largest contemporary standardized military anthropometric database currently available and provides an established benchmark for cross-national military anthropometric comparisons.

Historical IDF comparator data were derived from anthropometric surveys conducted among IDF personnel in 1974, 1986, and 1997 [8]. The 1998 IDF summary report describing the 1997 survey includes a dedicated methodology chapter and predefined anthropometric measures, supporting the use of the historical dataset as a structured comparator. The current (2024) survey protocol was well defined. However, full protocol equivalence between the current survey and all historical IDF survey generations could not be verified, particularly with respect to anatomical landmarks, instrumentation, and measurer training.

We used these datasets to evaluate secular anthropometric trends across successive cohorts of Israeli soldiers.

Statistical Analysis

Statistical analyses were performed using R statistical software (version 4.5.2, 2025-10-31). We computed descriptive statistics for each variable, including sample size (N), mean, standard deviation (SD), minimum observed value, and the 5th, 50th, and 95th percentiles. To quantify the precision of percentile estimates, bootstrap 95% confidence intervals were calculated for the 5th, 50th, and 95th percentiles using 2000 resamples [2]. We also compared anthropometric distributions of stature and body mass with those of the 1997 IDF anthropometric survey and the U.S. Army ANSUR II male military population using kernel density plots.

For comparative analyses, mean and 95th percentile differences were calculated as IDF values minus corresponding ANSUR II values; negative values therefore indicate smaller dimensions in the IDF cohort relative to the U.S. Army reference population. Mean differences were accompanied by 95% confidence intervals calculated using Welch's unequal variance approach. Standardized effect sizes were quantified using Hedges' g, based on the published ANSUR II male summary statistics reported in the ANSUR II summary report [2], to facilitate interpretation of the magnitude of between-population differences. No adjustment for multiple comparisons was applied. These comparative analyses were intended to characterize the magnitude and practical significance of anthropometric differences

rather than to perform formal hypothesis testing.

Secular change was expressed as the percentage change relative to the 1974 IDF baseline cohort for stature, body mass, and BMI at survey years 1986, 1997, and 2024 (current study).

Results

Descriptive Anthropometric Characteristics of the Current Cohort

Table 1 summarizes the anthropometric characteristics of the 253 male IDF combat soldiers included in the analysis. Age data were available for 248 participants. Mean age was 19.8 years (SD=0.84; range 18.6–23.2), and most participants were aged 19–20 years. Most participants had 7–12 months of military service at the time of measurement (83.0%). Mean stature was 176.2 cm (SD=6.6 cm), mean body mass was 72.5 kg (SD=8.9 kg), and mean BMI was 23.3 kg/m² (SD=2.5). The cohort demonstrated substantial anthropometric variability across operationally relevant dimensions, including a 217 mm 5th-to-95th percentile accommodation range for stature and a 198 mm range for chest circumference. Additional anthropometric dimensions and percentile distributions, together with bootstrap-derived 95% confidence intervals for percentile estimates, are presented in Table 1.

Comparative Anthropometric Distribution Relative to Historical IDF and ANSUR II

Figure 1 illustrates the distributions of stature and body mass across the 1997 IDF cohort, the current IDF cohort, and the ANSUR II male reference population. As shown in Figure 1, the stature density curves for the current IDF cohort and ANSUR II overlapped broadly across the observed range. In contrast, the body mass density curve of the current IDF cohort was shifted toward lower values relative to ANSUR II. Compared with the 1997 IDF cohort, the current IDF cohort demonstrated a modest rightward shift in both stature and body mass distributions, consistent with secular increases in anthropometric dimensions over time.

Variable	N	Mean (SD)	Range (min–max)	5th % (95% CI)	50th % (95% CI)	95th % (95% CI)
Body mass (kg)	250	72.5 (8.9)	51.8–109.1	60.2 (59.1 to 61.7)	71.7 (70.4 to 73.2)	86.8 (85.3 to 92)
BMI (kg/m²)	250	23.3 (2.5)	18.2–31.7	19.7 (19.3 to 20.1)	23 (22.7 to 23.4)	28.2 (27.1 to 28.8)
Stature (cm)	250	176.2 (6.6)	159.5–201.0	165.4 (164.4 to 167.2)	176 (174.7 to 177)	187.1 (185.5 to 188.5)
Head circumference	247	560.1 (15.7)	510.0–605.0	535 (534 to 540)	560 (560 to 562)	585 (580 to 591.4)
Neck circumference	248	372.1 (17.8)	320.0–440.0	345 (340 to 350)	370 (370 to 373.5)	400 (396.6 to 405)
Chest circumference	243	960.7 (59.8)	805.0–1,155.0	870 (860 to 890)	955 (948 to 960)	1067.7 (1050 to 1100)
Waist circumference	248	811.1 (56.9)	685.0–1,025.0	733.7 (730 to 740)	805.5 (800 to 812.5)	915 (890.6 to 942)
Biacromial breadth	247	397.6 (25.7)	318.0–462.0	346.9 (339.8 to 354)	401 (399 to 404)	434 (428.4 to 442.1)
Arm span	249	1,788.6 (84.3)	1,166.0–2,029.0	1671 (1647 to 1687)	1790 (1775 to 1805)	1905 (1890 to 1920)
Hand length	249	187.9 (10.5)	145.0–214.0	171.4 (170 to 174)	188 (186 to 190)	204 (201 to 208.2)
Hand breadth	249	81.9 (5.4)	55.0–97.0	74.4 (72 to 75)	82 (81 to 83)	90 (88.6 to 91)
Foot length	250	264.0 (12.1)	237.1–300.6	245.5 (244.4 to 245.5)	262.5 (262.5 to 266.7)	287.9 (279.4 to 287.9)

Table 1. Descriptive anthropometric characteristics of male IDF soldiers (n=253).
Values in parentheses indicate bootstrap 95% confidence intervals (CIs) for percentile estimates, calculated using 2,000 resamples. Sample sizes vary across anthropometric measures because of missing data. All linear and circumferential measurements are in mm. Foot length was estimated from recorded US shoe-size equivalents.

Secular Anthropometric Change within the IDF, 1974–2024

Figure 2 demonstrates secular changes in stature, body mass, and BMI among male IDF soldiers relative to the 1974 baseline cohort across successive survey cycles. Stature increased modestly but progressively, rising by 1.7%, 2.0%, and 3.1% in the 1986, 1997, and 2024 cohorts, respectively. In contrast, body mass increased more substantially over time, while BMI remained essentially unchanged in 1986, then increased by 1.8% in 1997 and 5.2% in 2024 relative to the 1974 baseline.

Operationally Relevant Anthropometric Comparisons: IDF versus ANSUR II

Table 2 summarizes operationally relevant anthropometric comparisons between the current IDF cohort and ANSUR II, together with the principal equipment and human-systems integration domains associated with each anthropometric dimension. Stature was similar between populations (mean difference = +0.6 cm, 95% CI −0.2 to 1.5 cm; Hedges' g = 0.09), indicating minimal differences in standing height. In contrast, the IDF cohort demonstrated substantially lower body mass (mean difference = −13.0 kg, 95% CI −14.2 to −11.8 kg; Hedges' g = −0.93) and BMI (mean difference = −4.3 kg/m², 95% CI −4.7 to −4.0 kg/m²; Hedges' g = −1.09). We also observed large effect sizes for chest circumference, waist circumference, neck circumference, biacromial breadth, and hand breadth, indicating meaningful differences between populations despite comparable stature. Head circumference, arm span, hand length, and foot length were likewise smaller in the IDF cohort at both the mean and 95th percentile (Table 2).

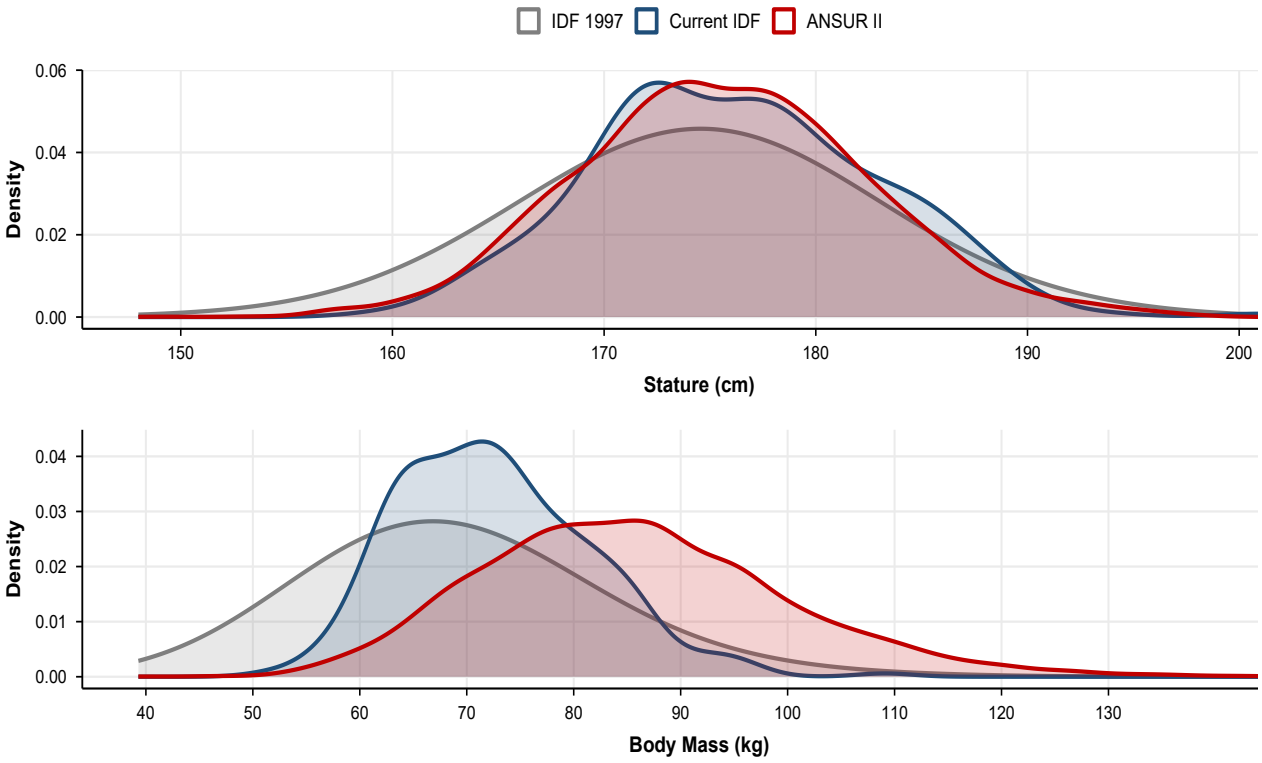


Figure 1. Stature and body mass distributions across male military populations.
Kernel density plots showing the distributions of stature and body mass in the 1997 IDF cohort, the contemporary IDF cohort, and the male US Army ANSUR II reference population. Density curves are presented for visual comparison of the distributions; no formal distributional test was performed.

Discussion

This study provides a contemporary anthropometric characterization of male IDF combat soldiers and demonstrates three principal findings.

First, although stature distributions in the current IDF cohort were broadly comparable to those of the U.S. Army ANSUR II population, the IDF cohort was substantially leaner across nearly all mass-based and circumferential dimensions. This comparison should be interpreted in light of the age difference between the two cohorts. The IDF cohort consisted primarily of young conscripts in the early stages of mandatory service. In contrast, ANSUR II includes U.S. Army personnel across a broader age range and has a substantially higher mean age. Because age influences body mass, body composition, and circumferential dimensions, some observed differences between the cohorts may reflect age-related effects rather than population-specific effects.

Second, secular increases in stature and body mass, accompanied by more modest increases in BMI, have occurred across successive IDF survey cycles since 1974. These secular changes support periodic updates to anthropometric reference data rather than relying solely on historical datasets for contemporary design and procurement.

Third, the magnitude and consistency of anthropometric differences between the IDF and ANSUR II populations suggest that directly applying foreign military anthropometric specifications to IDF equipment procurement may contribute to sizing mismatch.

However, the IDF–ANSUR II comparison should be interpreted as operationally informative rather than as a purely age-independent population contrast. The anthropometric profile of the contemporary male IDF combat soldier reflects a young adult male early in mandatory military service. Mean BMI in the present cohort (23.3 kg/m²) was similar to the mean BMI reported in a randomized induction-day sample of 3051 Israeli male conscripts whose recruitment data were collected between 2010 and 2016 [6], suggesting that the current cohort is broadly consistent with recent anthropometric values. However, it should not be interpreted as a representative sample of all male

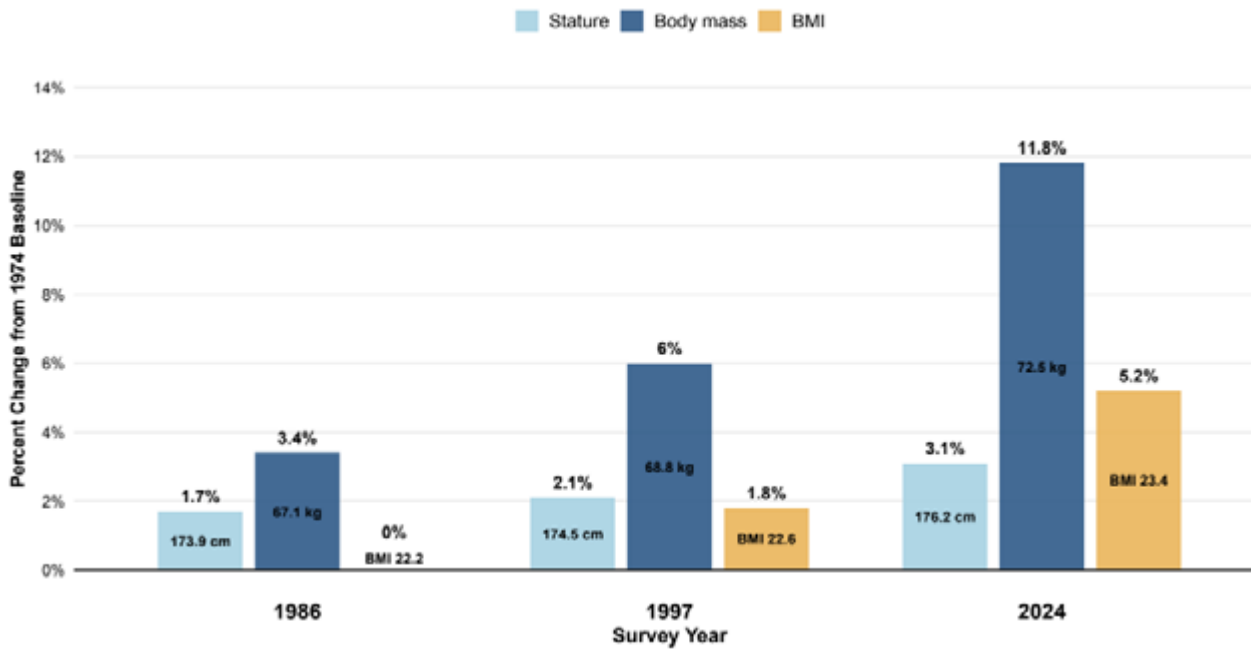


Figure 2. Relative secular anthropometric change among male IDF soldiers since 1974.
Percentage change in mean stature, body mass, and BMI in the 1986, 1997, and 2024 IDF cohorts relative to the 1974 IDF baseline cohort. Percentages above the bars indicate relative change from the 1974 baseline; values within the bars indicate the corresponding cohort mean.

combat soldiers in the IDF. Mean stature and body mass similarly aligned with previously reported induction-day anthropometric values [6]. At the same time, the present cohort showed substantial within-population variability across all measured dimensions. The breadth of the percentile ranges across dimensions indicates that equipment-sizing strategies should account for within-population variability rather than rely on mean values alone. Because military equipment sizing systems are conventionally designed to accommodate approximately the central 90% of the target population1, these distributions provide a relevant dimensional framework for IDF equipment design and procurement. The observed historical differences across IDF survey cycles are consistent with broader anthropometric trends documented in Western military populations [5]. However, these comparisons should be interpreted cautiously because full protocol equivalence across survey generations could not be verified. Relative to the 1974 baseline cohort, stature increased by 3.1%, while body mass increased by 11.8%. The more pronounced increase in body mass relative to stature was accompanied by a gradual increase in BMI across later survey cycles, indicating that body mass gains

Variable	IDF		ANSUR II		Mean difference (95% CI)	P95 difference	Hedges' g	Operational relevance
	Mean	95th %	Mean	95th %				
Body mass (kg)	72.5	86.8	85.5	110.7	−13 (−14.2 to −11.8)	−23.9	−0.93	Load carriage, body armor fit, and equipment burden
BMI (kg/m²)	23.3	28.2	27.7	34.8	−4.3 (−4.7 to −4)	−6.6	−1.09	Contextualizes body mass relative to stature; not a primary sizing variable
Stature (cm)	176.2	187.1	175.6	187.0	0.6 (−0.2 to 1.5)	0.1	0.09	Standing clearance, accommodation, and equipment sizing envelopes
Head circumference	560.1	585.0	574.4	601.0	−14.3 (−16.3 to −12.3)	−16.0	−0.89	Helmet sizing and head-borne systems
Neck circumference	372.1	400.0	397.6	443.0	−25.6 (−27.9 to −23.2)	−43.0	−1.01	Collars, respirators, and neck-borne equipment
Chest circumference	960.7	1067.7	1058.7	1207.0	−98 (−106 to −89.9)	−139.3	−1.14	Body armor, tactical vests, and upper-torso equipment interface
Waist circumference	811.1	915.0	940.6	1130.9	−129.4 (−137.3 to −121.5)	−215.9	−1.18	Belts, load-carriage systems, and armor interface
Biacromial breadth	397.6	434.0	415.7	447.0	−18.1 (−21.4 to −14.8)	−13.0	−0.92	Shoulder straps, packs, plate carriers, and seat accommodation
Arm span	1788.6	1905.0	1814.2	1956.9	−25.6 (−36.4 to −14.7)	−51.9	−0.30	Reach envelopes, workstation access, and equipment interaction
Hand length	187.9	204.0	193.3	210.0	−5.4 (−6.7 to −4)	−6.0	−0.54	Gloves, weapon controls, and manual interface design
Hand breadth	81.9	90.0	88.3	96.0	−6.4 (−7.1 to −5.7)	−6.0	−1.44	Glove sizing, grips, and weapon controls
Foot length	264.0	287.9	271.2	293.0	−7.1 (−8.7 to −5.6)	−5.1	−0.55	Boot sizing, footwear procurement, and foot-related injury prevention

Table 2 – Operationally relevant anthropometric comparison between male IDF soldiers and ANSUR II. Differences in mean values were calculated as IDF minus ANSUR II. Negative values indicate smaller anthropometric dimensions in the IDF cohort. The 95% confidence intervals (CIs) for mean differences were calculated using Welch's method to account for unequal variances between populations. Hedges' g was used to quantify standardized mean differences, while P95 differences were calculated by subtracting the ANSUR II 95th-percentile values from the corresponding IDF values. All linear and circumferential measurements are expressed in mm. Foot length in the IDF cohort was estimated from recorded US shoe-size equivalents.

outpaced stature gains over time. From an operational perspective, secular increases of this magnitude may progressively reduce the accuracy of historical sizing systems when applied to contemporary populations [1,5]. Similar secular increases in body dimensions have been documented in other military populations, including Royal Australian Air Force aircrew [12] and the UK Tri-Service anthropometric resurvey, which was initiated because existing datasets no longer adequately represented the contemporary force [5]. Comparable inter-population anthropometric differences have also been reported among Brazilian Air Force personnel, reinforcing that military populations are not anthropometrically interchangeable [13]. These findings suggest that periodic anthropometric surveillance may be a valuable component of ongoing force characterization and equipment planning, rather than a one-time procurement process.

The observed IDF and ANSUR II differences may have important operational implications. Despite near-equivalence in stature, the IDF cohort showed consistently smaller chest, waist, neck, shoulder, and hand dimensions than the ANSUR II reference population. Moderate-to-large standardized effect sizes for several circumferential and appendicular dimensions further supported these differences, indicating they are not only statistically precise but also operationally meaningful. Mean chest circumference differed by 98 mm and waist circumference by 129 mm, with even larger divergence observed at the upper percentiles of the distribution. These findings suggest that body armor, tactical vests, load-bearing systems, and other torso-mounted equipment designed around ANSUR II sizing assumptions may over-accommodate parts of the IDF population if applied without local validation. However, these inferences are based on anthropometric comparison rather than direct fit testing of specific equipment systems. Previous work evaluating military clothing sizing systems has demonstrated that population-specific anthropometric calibration may help reduce sizing mismatch and improve functional fit [14].

Poorly fitted PPE has been associated with reduced mobility, impaired task performance, increased musculoskeletal strain, and decreased operational effectiveness [4]. Anthropometric mismatch has additionally been associated with elevated musculoskeletal injury risk in military populations [15]. Oversized armor systems may additionally impair ballistic plate positioning, load distribution, and integration with adjacent equipment components [5].

Differences in head and hand dimensions also carry operational significance. Mean head circumference in the IDF cohort was approximately 14 mm smaller than in the ANSUR II population, indicating a difference in the head circumference distributions of the two cohorts. The implications of this difference for specific helmet size bands cannot be determined without evaluation of the relevant sizing boundaries. Similarly, hand length and breadth were consistently smaller in the IDF cohort by approximately 5–6 mm across both mean and upper-percentile values. Although modest in isolation, these differences may influence glove sizing distributions and the interface between the soldier and manually operated systems [1]. Similarly, the smaller estimated foot length distribution observed in the IDF cohort may have implications for military footwear sizing distributions and procurement planning. In contrast, stature showed near-equivalence between the two populations, indicating that certain height-governed design parameters, such as overhead clearances, may be more transferable across these military populations than circumferential or mass-based dimensions.

The present study provides anthropometric characterizations of male IDF combat soldiers in nearly three decades using standardized measurement methodology adapted from established military anthropometric survey protocols [2]. The inclusion of distributional analyses with bootstrap confidence intervals, historical secular comparisons, and direct benchmarking against ANSUR II using confidence intervals and standardized effect sizes enables both operational and longitudinal interpretation of the findings.

Several limitations warrant consideration. This analysis was limited to male combat soldiers. It therefore may not fully generalize to female personnel, reserve forces, or non-combat occupational groups within the IDF. The cohort was derived from a non-random convenience sample of four selected combat units and therefore

should not be interpreted as fully representative of all male IDF combat soldiers. Differences between units in operational profile, pre-service selection stringency, and training demands may influence anthropometric characteristics and limit generalizability. Future studies should examine whether anthropometric characteristics differ systematically across different IDF combat populations. Comparisons with historical IDF datasets and ANSUR II are additionally subject to potential differences in sampling methodology and measurement protocols across survey periods. Although the 1998 IDF report describing the 1997 survey includes a dedicated methodology chapter and predefined anthropometric measures, full equivalence of anatomical landmarks, instrumentation, and measurer training could not be verified across all historical survey years. Accordingly, some observed long-term differences may reflect methodological drift across survey generations rather than true anthropometric change alone.

Although bootstrap confidence intervals were calculated for percentile estimates, the precision of tail estimates remains inherently lower than measures of central tendency and should be interpreted accordingly. In addition, the IDF cohort was substantially younger than the ANSUR II male cohort, and age-related differences in body composition and circumferential dimensions may have contributed to some of the observed differences between populations. Foot length was estimated from footwear sizing equivalents rather than measured directly, limiting the precision and comparability of foot-length estimates. Future surveys should incorporate standardized direct foot length and breadth measurements. Finally, the cross-sectional design precludes causal inference regarding the determinants of the observed secular anthropometric trends.

Conclusions

This study provides a contemporary anthropometric characterization of male IDF combat soldiers after completing initial combat training, with a mean stature of 176.2 cm, mean body mass of 72.5 kg, and mean BMI of 23.3 kg/m². Historical comparison across five decades suggested cumulative increases of 3.1% in stature, 11.8% in body mass, and 5.2% in BMI relative to the 1974 IDF baseline. Despite broadly comparable stature distributions, the IDF cohort was consistently smaller than the U.S. Army ANSUR II population across nearly all mass-based and circumferential measures, including chest, waist, and head circumference, as well as body mass. These differences were accompanied by moderate-to-large standardized effect sizes across most anthropometric measures, reinforcing the practical significance of the observed population differences.

These findings demonstrate that anthropometric similarity in stature does not imply equivalence across other operationally relevant body dimensions. These findings support using contemporary, population-specific anthropometric data for IDF equipment sizing and procurement decisions. Contemporary, population-specific anthropometric surveillance may help optimize the design, procurement, and human-systems integration of military equipment within the IDF. Periodic anthropometric resurveys are therefore needed to keep support systems aligned with the changing combat soldier population.

Conflict of interest

The authors declare no conflicts of interest.

Source of Support

None to declare.

Disclaimer

The views expressed are the authors' own and not an official position of the institution, the funder, the IDF, or the IMA.

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