Diabetes and Military Service

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Disclosures

- Darrick Beckman, M.D., has no relevant financial or non-financial relationships to disclose relating to the content of this activity.
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Background

- Slightly more than 1% of the active duty population are diagnosed with diabetes
  - Rate remained stable from 2006-2010
  - Diagnosis more common as age increases
  - Type 2 diabetes more common
- Of active duty service members diagnosed with type 2 diabetes
  - Mean age at diagnosis 35.2 years old
  - Average 13.6 years of military service at time of diagnosis
  - Similar risk factors compared to the general US population

Medical Standards Directory

- Access the Medical Standards Directory (MSD) through the Air Force Knowledge Exchange (Kx)
- The MSD will tell you which medical diagnoses require a Medical Evaluation Board (MEB)

Air Force Knowledge Exchange

Headquarters View | Functional View | MAJCOMs & MTFs | Restricted Access | CAIB & IDS | Find a Site | Help

Quick Links

- AFMS Virtual Library
- AFMS on Facebook
- AFMS on Twitter
- Kx Tutorial Videos
- AFMS Public Site
- Site Map
- CarePoint

Top 20 Sites

1. AFMS Analytics
2. Virtual Library
3. Flight Medicine/Medical Standards
4. SGAR Budget Execution
5. Enterprise Intel & Data Support
6. AF Nursing Services
7. AF Dental Service
8. Waiver Guide
9. USAF EMS
10. Self-Aid and Buddy Care
11. Public Health
12. AFMOA Ed & Trng
13. CMRP
14. AF Medical Service Corps
15. AF Medical Home
16. AFMOA Health Benefits
17. ADAPT
18. MSC Utilization and Education
19. Dental Pop Health
20. AFMOA Nursing Provision of Care

My Shortcuts

In the News

Air Force Surgeon General News

Retiring Surgeon General saw revolution in expeditionary care
Air Force Surgeon General visits AFMES, AFMAO, 436th MDG medics
Top doc checks up on Keesler Medical Center
Richmond Raceway names Maj. Gen. Dorothy Hogg as Honorary Race Official
Air Force researchers develop kidney care for austere environments

Last update on: 9/4/2018, 11:11:01

Announcements

- Did you know there is a new notification system available to receive timely news/events and system outages for the Kx? It's called GovDelivery. For instructions on how to sign up click **here**.
- Want to create a new site for your organization? It's easy and anyone can request one! Just go to the **Request Form** to create one.
- We now support PIV card access. Help us spread the word!
- Want to display Excel tables or graphs on your page? It's easy! **Check it out**.

Air Force Knowledge Exchange

Flight Medicine/Medical Standards

Search This Site... Alexis A Beauvais ?

- Flight & Operational Medicine Branch
- Aerospace Medicine Consultant
- Flight and Operational Medicine
  - AFMSA Personnel Reliability Assurance Program
  - BOMC (Home)
  - BOMC Plans & Policies
- Joint Aerospace Medicine Standards
- Occupational Medicine
  - Separation History & Physical Exam (SHPE)
- Medical Standards & Waivers
  - AFI 48-123 Med Exams & Standards
  - AFI 10-203 Duty-Limiting Conditions
  - MSD 24 May 2018 V2
  - Aircrew Med List 24 May 2018
  - MOD Medication List 24 May 2018

- Medical Operations and Research (AFMSA/SG3/5)
- Air Force Chief of Aerospace Medicine Policy and Operations (AF/SG3P)
- Aerospace Medicine Branches
- AFMSA Flight & Operational Medicine Branch Directory
- Consultant's Corner
- Flight & Operational Medicine
- Air Force Personnel Reliability Assurance Program
- Occupational Medicine
- Medical Standards & Waivers of Medical Standards
- Medical Standards Directory
- AFPC Retention Medical Standards
- Useful links
- Aerospace Medicine Signed Documents
- nformation
- Flight & Operational Medicine
- Information Vault
- Aerospace Medicine Education (AMP, AMIP, PRP, MDG/CC, SGP, Global Medicine

Medical Standards Directory

Section M: Endocrinology and Metabolic USAF Medical Standards

Combat Controller (1C2X1): Continued service must meet FCIII and GBC standards. In addition, initial exams need to meet interservice school requirements (SSR). SSR PAGE
CRO and STO (13DXA and 13DXB): Must meet FCIII standards. In addition, must meet sister school requirements to attend school. SSR PAGE
Combat Weather (1W0X1, 1W0X2, 15WXX): Must meet FCIII standards. In addition, must meet sister school requirements to attend school. SSR PAGE
Pararescue (1T2X1): Must meet FCIII standards. In addition, must meet sister school requirements to attend school. SSR PAGE
RPA Sensor Operator (1U0X1): Must meet GBC standards.
SERE: Must meet SERE requirements on SERE tab. Also must meet FCIII requirements for continued jump status and interservice requirements to attend school. SERE SSR
TAC-P (1C4X1, 13LX), if Ground Only: GBC standards. Otherwise must meet FCIII and GBC standards. In addition, initial exams must meet sister service requirements to attend school. SSR PAGE

	Endocrine and Metabolic Disqualifying Conditions	"X" = Standard applies								Comments
		Retention	Flying Class I/IA	Flying Class II	RPA Pilot	Flying Class III	Ground Based Controller (GBC)	Missile Operation Duty (MOD)	Operational Support Flying Duty	
M1	Acromegaly.	X	X	X	X	X	X	X	X	
M2	Adrenal hyperfunction not responding to therapy or when requiring ongoing specialty f/u more than annually.	X	X	X	X	X	X	X	X	
M3	Adrenal insufficiency or Addison's Disease.	X	X	X	X	X	X	X	X	
M4	Adrenal dysfunction of any degree including pheochromocytoma.		X	X	X	X	X	X		
M5	Diabetes insipidus.	X	X	X	X	X	X	X	X	
M6	Diabetes mellitus, type 1 or type 2, including diet controlled and those requiring insulin or oral hypoglycemic drugs. Note: Gestational diabetes is not specifically disqualifying; however, these aircrew members are at increased risk of subsequent development of diabetes mellitus and should be closely followed.	X	X	X	X	X	X	X	X	See AMWG.
M7	Persistent glucosuria from any cause, including fasting renal glucosuria is disqualifying. Glucosuria post-prandially, or during glucose loading challenge, is not disqualifying in the absence of any renal disease, or history of recurrent genitourinary infections. However, this finding requires evaluation.		X							
M8	Gout, with frequent acute exacerbations in spite of therapy, or with severe bone, joint, or kidney damage.	X	X	X	X	X	X	X	X	See AMWG.
M9	Gout.		X	X		X				See AMWG.
M10	Hyperinsulinism, when caused by a malignant tumor, or when the condition is not readily controlled.	X	X	X	X	X	X	X	X	
M11	Hyperinsulinism, confirmed, symptomatic.		X	X	X	X	X	X		
M12	Hyperparathyroidism, when residuals or complications are present, or when requiring ongoing specialty follow-up more than annually.	X	X	X	X	X	X	X	X	
M13	Parathyroid dysfunction.		X	X	X	X	X	X		

Enlistment Standards

- DoD Instruction 6130.03 Medical Standards for Appointment, Enlistment, or Induction into the Military Services
  - Applies to all branches of the military
- Section 5: Disqualifying Conditions
- Applies for those entering military AND first six months of service
- If new diagnosis of diabetes in an Air Force trainee, notify Trainee Health at Reid Clinic (210) 671-5535

Enlistment Standards

- Diabetes is a disqualifying medical diagnosis
- Diabetic disorders including:
  - History of Diabetes Mellitus
  - History of unresolved pre-diabetes mellitus (as defined by the American Diabetes Association) within the last 2 years
  - History of gestational diabetes mellitus
  - Current persistent glycosuria, when associated with impaired glucose metabolism or renal tubular defects

USAF Disability Evaluation System

- Two major components:
  - Medical Evaluation Board (MEB)
  - Physical Evaluation Board (PEB Informal and Formal)
- Two of the three members of the MEB are the Chief of Aerospace Medicine (SGP) and Chief of the Medical Staff (SGH)
- All profiles are evaluated monthly by the Deployment Availability Working Group (DAWG) to identify service disqualifying conditions

Medical Evaluation Board

- Primary Care Manager OR the Deployment Availability Working Group (DAWG) can recommend MEB
  - Notify your clinic DAWG representative or your PEBLO of need for a new MEB
- Primary Care Manager or specialist completes Narrative Summary for the condition being evaluated by MEB
  - Template provided by PEBLO
- The PEBLO takes on each service member's MEB
- PEBLO required to submit a completed MEB package to AFPC within 30 days of the dictated MEB narrative summary
- Different factors influence MEB decision

Army Personnel

- Army service members diagnosed with diabetes may also need a MEB
- This process should be triggered through the profiling system
- Review AR 40-501 Standards of Medical Fitness
  - Section 3-11 states that diabetes with A1c not maintained at 7% or less using lifestyle modification needs MEB
  - If MEB returns “fit for duty” Army personnel requiring insulin should not deploy to areas where insulin cannot be properly stored
  - Army personnel on oral diabetes medications may be considered worldwide deployable

Diagnostic Considerations: Gestational Diabetes

- Active Duty women with gestational diabetes do not require MEB
- Increased risk of developing recurrent gestational diabetes, prediabetes and type 2 diabetes
- Recommend retest 4 to 12 weeks after delivery
  - Two hour 75g oral GTT recommended
    - Diabetes diagnosed if fasting glucose ≥126 or two hour glucose ≥200
  - A1c can be used but less accurate in post partum period due to increased peripartum red cell turnover
- Repeat testing at LEAST every three years

Diabetes and Deployment

- Little research exists regarding deployment and diabetes
- Deployment leads to increased physical demand
- Deployed locations may be austere
  - Limited access to electricity, refrigeration and clean water
  - Extremes of temperature and altitude
  - Limited medical treatment capabilities

Folaron et al., 2018

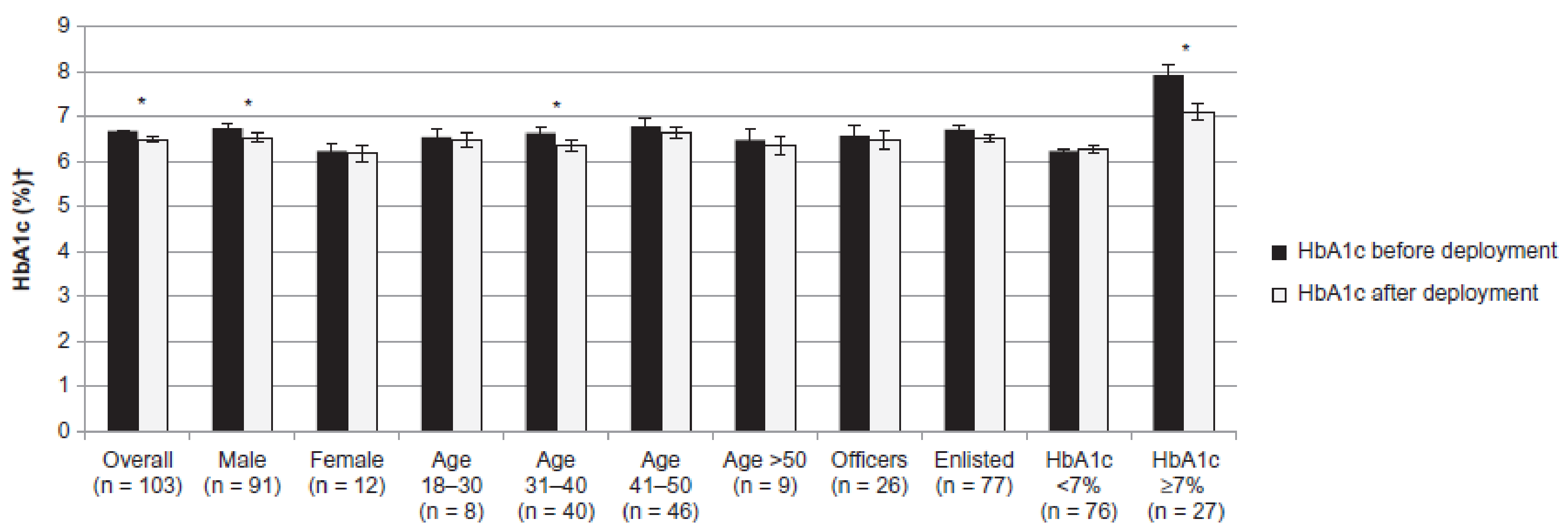

FIGURE 1. HbA1c before and after deployment for the overall population and subgroups. Data represents mean HbA1c +/− SE. $^{*}p < 0.05$. †[10.93 × HbA1c%]−23.5 = mmol/mol.

Folaron et al., 2018

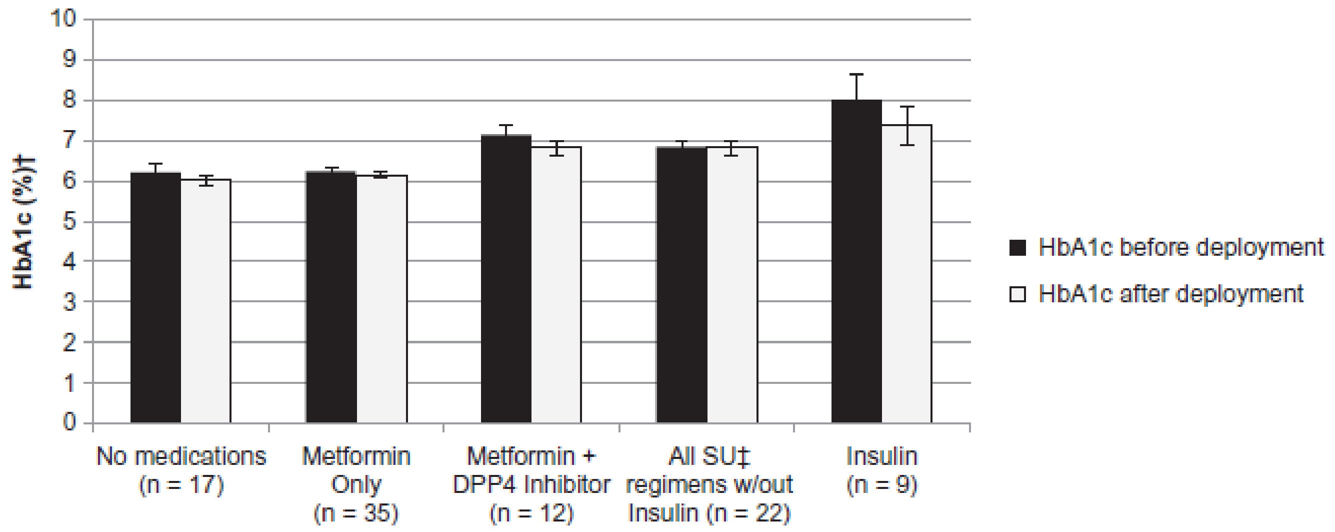

FIGURE 2. HbA1c before and after deployment based on therapeutic interventions. Data represents mean HbA1c +/− SE for those with paired HbA1c values. †[10.93 × HbA1c%]–23.5 = mmol/mol. ‡Sulfonylurea-containing.

Folaron et al., 2018

FIGURE 3. BMI before and after deployment for the overall population and subgroups. Data represents mean BMI +/− SE. *$p < 0.05$. ‡Data represents those with paired HbA1c and BMI values.

Folaron et al., 2018

- Recommend A1c <7% as an appropriate threshold for deployment, using ADA guidelines
- Assess for history of severe hypo or hyperglycemia prior to deployment
- Oral medications preferable due to portability, stability and ease of administration
  - Metformin has an adequate safety profile for deployment
- Sulfonylureas have risk for hypoglycemia, not optimal
- Insulin usage has risk of hypoglycemia, challenges with storage (refrigeration)

Army Deployment Standards

Table 5–1
Guidance on deployment of Soldiers with diabetes

Factor	OK to Deploy	Should Not Be Deployed
Hgb A1C (for patient)	At target	Not at target
Monofilament discrimination	Present	Absent
Autonomic neuropathy	Absent	Present
Knowledge of sick day rules	Sufficient	Insufficient
Proliferative diabetic retinopathy	Absent	Present
Macular edema	Absent	Present
Severe hypoglycemia (an episode requiring another person's assistance)	Infrequent	Frequent
History of diabetic ketoacidosis in previous 6 mos.	No	Yes
Self-management skills	Good	Poor
Hypoglycemia unawareness	Absent	Present
Parameters of permanent profile can be followed	Yes	No
Significant co-morbidities (for example, congestive heart failure, chronic kidney disease, significant coronary artery disease, poorly controlled hypertension) requiring intensive management	Absent	Present
Risk of hypoglycemia is high if meals are missed or delayed	No	Yes
Duty will place the Soldier in an OCONUS-Isolated area where appropriate medical care and means to monitor and support him/her are not available	No	Yes

How to Obtain CE Credits

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2. In the search bar on the top left, copy and paste the activity name: **Diabetes Champion Course #16**. This will take you to the activity home page.
3. Click on the REGISTER/TAKE COURSE tab.
   a. If you have previously used the CEPO LMS, click login.
   b. If you have not previously used the CEPO LMS click register to create a new account.
4. Verify, correct, or add your profile information.
5. Enter the Access code
6. Follow the onscreen prompts to complete the post-activity assessments:
   a. Read the Accreditation Statement
   b. Complete the Evaluation
   c. Take the Posttest
7. After completing the posttest at 80% or above, your certificate will be available for print or download.
8. You can return to the site at any time in the future to print your certificate and transcripts at https://www.dhaj7-cepo.com/
9. If you require further support, please contact us at dha.ncr.j7.mbx.cepo-lms-support@mail.mil

Case Study
Ivanna Babbe

Major Alexis Beauvais
MD, MPH, MC, USAF
International Health Specialist
HQ USSOUTHCOM

Ivanna Babbee

- 32 yo African American female
- AD Major
- Type 2 DM
- “What are the results of my pregnancy test? I’ve been tagged for the next deployment rotation.”

- **What information will the provider need for the appointment?**
- **Considering the resources available**
  - **Who can collect the information?**
  - **When would the information be collected?**
  - **How will it be communicated?**

Ivanna Babbee

- 32 yo African American female
- AD Major, Pharmacy
  - Deployment Rotation
  - RILO
- Type 2 DM x 2years
- "What are the results of my pregnancy test? I've been tagged for the next deployment rotation."

Deployment considerations

- **RILO**
- **Patient career preference**
- **Diabetes medications**
  - **Oral vs insulin**
  - **Glucose management**
  - **Resources at deployed site**
- **Pregnancy**
  - **Desire for pregnancy**
  - **Birth control**

Ivanna Babbee

- 32 yo African American female
- AD Major, Pharmacy
  - Deployment Rotation
  - RILO
- Type 2 DM x 2years
- "What are the results of my pregnancy test? I've been tagged for the next deployment rotation."

- **A1C/BP/Lipid goal/target**
- **Medication considerations**
- **Lifestyle Management**
  - ✓ **DSME**
  - ✓ **Psychosocial***
  - ✓ **Nutrition**
  - ✓ **Physical Activity**

- BP 128/76 P 72 BMI 26.31
  - Ht 67 in Wt 168 lb
- A1C 8.2 MicroAlb 20 (Prev 35 x2) Chol 194 LDL 143 HDL 31 Trig 214 pregnancy test-negative
- HTN, HLP, GDM with 1st child (2yo)
- Social history:
  - Non-smoker
  - Married, one child
- Meds: Sitagliptin/metformin 50 mg/ 1000mg, Glipizide XL 10 mg daily, Atorvastatin 40 mg daily, Lisinopril 40 mg daily
- Retinal Exam: 2 months ago
- Foot exam: low risk foot
- Glucose log averages:
  B 132 L 164 S 188 BT 297

Case Studies
Frank Pennerknie

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Frank Pennerknie

- 34 yo Caucasian male
- AD TSgt
- Follow-up post-hospitalization for ACL repair
- New onset Diabetes
- "How soon can I get off this insulin?"

- **What information will the provider need for the appointment?**
- **Considering the resources available**
  - **Who can collect the information?**
  - **When would the information be collected?**
  - **How will it be communicated?**

Frank Pennerknie

- 34 yo Caucasian male
- AD TSgt Security Forces
- Follow-up post-hospitalization for ACL repair
- New onset Diabetes
- “How soon can I get off this insulin?”

MEB Considerations

- Different for each service
  - Air Force (AFI 36-3212)
    - Medical Standards directory (MSD)
    - AFKX
  - Army (AR 40-501)
  - Navy (SECNAV I 1850)
- Factors to influence retention
  - AFSC/MOS
  - Time in service
  - Deployability
  - Disease management
- VA eligibility
  - Disability rating
  - Defer to VA representative (va.gov)

Frank Pennerknie

- 34 yo Caucasian male
- AD TSgt, Security Forces
- Follow-up post-hospitalization for ACL repair
- New onset Diabetes
- "How soon can I get off this insulin?"

- **A1C/BP/Lipid goal/target**
- **Medication considerations**
- **Lifestyle Management**
  - ✓ **DSME**
  - ✓ **Psychosocial***
  - ✓ **Nutrition**
  - ✓ **Physical Activity**

- BP 114/76 P 70 BMI 26.58
  - Ht 71 in Wt 193 lb
- A1C 12.3
  Chol 174 LDL 94 HDL 56 Trig 120
- ACL repair
- Social history:
  - Smoker
  - Single
- Meds: Metformin 1000 mg bid, Glargine 12 units daily, SSI Aspart 1:50>150 before meals/bedtime, Esomeprazole 20 mg daily, Lisinopril 10 mg daily, Hydrocodone/APAP prn pain
- Retinal Exam: none
- Foot exam: low risk foot
- Glucose log averages:
  B 182 L 264 S 248 BT 323

Frank Pennerknie

- 34 yo Caucasian male
- AD TSgt, Security Forces
- Follow-up post-hospitalization for ACL repair
- New onset Diabetes
- "How soon can I get off this insulin?"

- **A1C/BP/Lipid goal/target**
- **Medication considerations**
- **Lifestyle Management**
  - ✓ **DSME**
  - ✓ **Psychosocial***
  - ✓ **Nutrition**
  - ✓ **Physical Activity**

- BP 114/76 P 70 BMI 26.58
  - Ht 71 inches Wt 193
- A1C 12.3 Chol 174 LDL 94 HDL 56 Trig 120 Glut Dcarb AB >30, Islet Cell AB 39, Insulin AB 0.5, TPO 15
- ACL repair
- Social history:
  - Smoker
  - Single
- Meds: Metformin 1000 mg bid, Glargine 12 units daily, SSI Aspart 1:50>150 before meals/ bedtime, Esomeprazole 20 mg daily, Lisinopril 10 mg daily, Hydrocodone/APAP prn pain
- Retinal Exam: none
- Foot exam: low risk foot
- Glucose log averages:

  B 182 L 264 S 248 BT 323

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4. Verify, correct, or add your profile information.
5. Enter the Access code
6. Follow the onscreen prompts to complete the post-activity assessments:
   a. Read the Accreditation Statement
   b. Complete the Evaluation
   c. Take the Posttest
7. After completing the posttest at 80% or above, your certificate will be available for print or download.
8. You can return to the site at any time in the future to print your certificate and transcripts at https://www.dhaj7-cepo.com/
9. If you require further support, please contact us at dha.ncr.j7.mbx.cepo-lms-support@mail.mil