About a quarter of medical students report signs of depression, according to a 2016 JAMA study. That number is at least twice as high as the reported incidences of depression among the general population.

Additional research published this year involving nearly 4,000 medical students attending 49 medical schools examines the factors that influence depression among future doctors.

There are several common factors measured during the first year of medical school that increased the risk of students experiencing depression symptoms during the fourth-year of medical school, says the study, “A Prognostic Index to Identify the Risk of Developing Depression Symptoms Among U.S. Medical Students Derived From a National, Four-Year Longitudinal Study,” published in Academic Medicine this year.

The study’s lead author is AMA member Liselotte Dyrbye, MD, MHPE, professor of medicine and medical education and co-director of the Program on Physician Well-Being at Mayo Clinic in Minnesota.

Dr. Dyrbye collaborated with colleagues from Mayo Clinic, Yale, the University of Minnesota, Syracuse University, Stanford, and Oregon Health & Science University (OHSU). OHSU was the primary site of the study, and OHSU School of Nursing Grace Distinguished Professor Michelle van Ryn, PhD, MPH, was the principal investigator.

Here’s a look at the factors that make medical students more likely to experience depression.

**Demographics**

**Age:** The study shows an increased risk of depression symptoms among fourth-year medical students 24 or older, with 34% of respondents over 24 showing symptoms of depression. That
number is 4 percentage points higher than among students younger than 24.

“This risk occurs despite matriculating medical students entering medical school with a lower prevalence of depressive symptoms than similarly aged college graduates who pursued other careers,” says Dr. Dyrbye.

**Ethnicity:** Respondents who were not Hispanic were more likely to be experiencing depression symptoms (26%) than those who were Hispanic (31%).

**Tuition**

The study explores the relationship between medical school class size, tuition, research intensity of the medical school, and average Medical College Admission Test score of matriculating medical students. Among these school related factors, only tuition was independently related to students’ risk of depression at the end of medical school.

The study shows that students attending a school near the national average for in-state tuition were more likely to show symptoms of depression than those attending a school with below-average tuition.

**Mental health characteristics**

Some of the more traditional factors that are associated with depression were also common among at-risk respondents.

**Stress:** Students who reported high levels of stress during the first year of medical school had a 49% increased odds of having symptoms of depression during the fourth year of medical school.

**Social support:** This variable was measured through the Medical Outcomes Study Social Support Measure, with higher scores indicating better social support. Of those scoring below average on the social support metric during the first year of medical school, 44% were likely to show signs of depression during the fourth year of medical school. That compares with 26% of respondents who scored above average.

**Coping:** Researchers measured coping behaviors by analyzing them in three subscales—social coping (turning to others for help), negative coping (self-blaming and denial), and positive coping (actively dealing with the problem).

Those who relied on negative coping behaviors during the first year of medical school were 61% more
likely to experience signs of depression during the fourth year of medical school, the study says.

Learn more about actions recently taken by the AMA House of Delegates to address issues of depression, substance-use disorder and suicide among medical students and physicians.