

## Alcohol dependence in women: Comorbidities can complicate treatment



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Screen for trauma history, mood and anxiety disorders, and treat them concurrently

**M**s. F, a 53-year-old high school English teacher, is referred to you by her family physician after she was suspended from work for suspected intoxication. She was divorced 2 years ago from her husband of 20 years, and she says her drinking has escalated to 2 bottles of wine every night. She wants to reduce her alcohol use but experiences shakiness, nausea, and diaphoresis when she tries to cut back.

Ms. F began drinking at age 16 “to feel more comfortable in social situations” and has experienced binge drinking with intermittent blackouts. She denies illicit drug use and legal consequences from drinking. Her father died from cirrhosis at age 58. Her mother suffers from depression but is in remission with medication.

Ms. F is hesitant to date or establish intimate relationships. She has stopped attending church, a book club, and her 15-year-old daughter’s booster club activities.

For years, little was known about alcohol use and alcohol-related problems in women such as Ms. F.<sup>1</sup> Alcohol dependence studies rarely included women, so findings and treatment outcomes observed in men were assumed to apply to both genders.

Awareness of gender differences in addiction has grown (**Box 1**).<sup>2-5</sup> Biological and psychosocial differences between alcohol-dependent women and men now are understood to influence etiology, epidemiology, psychiatric and medical comorbidity, course of illness, and treatment outcomes. This article discusses recent insights into planning treatment to address specific needs of alcohol-dependent women.

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Box 1

## Alcohol dependence in men and women: Gender gap narrows

Epidemiologic surveys consistently show higher rates of alcohol use disorders in men than women, but recent data suggest a narrowing of the gender gap. Studies from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) from 1991 to 1992 and 2001 to 2002, found:

- a significant increase in the 12-month prevalence of alcohol abuse among men (4.7% to 6.9%) and women (1.5% to 2.6%)
- a significant decrease in alcohol dependence among men (6.3% to 5.4%) but not women (from 2.6% to 2.3%).
- a significant increase in rate of alcohol dependence among African-American women age 18 to 29 (from 2.1% to 3.8%).

- the gender differential in alcohol dependence narrowed from 3.8% to 3.1%.<sup>2,3</sup>

Similarly, studies conducted 60 years ago showed that boys were more likely than girls to report first alcohol use between ages 10 and 14 (4:1 ratio). Now the age of first alcohol use is relatively equivalent in boys and girls.<sup>3</sup> This convergence is disconcerting and suggests that screening and prevention initiatives for adolescents need to increase their focus on girls.

Overall, these observations support the ‘convergence hypothesis,’ which holds that the gap between men’s and women’s alcohol consumption has narrowed as women’s use of alcohol has increased.<sup>4,5</sup>

### Accelerated consequences

As a group, women may consume less alcohol than men but progress more rapidly to alcohol-related illnesses and negative consequences. Specifically, alcohol-dependent women develop liver disease, hypertension, and gastrointestinal hemorrhage more rapidly than alcohol-dependent men.<sup>3</sup> Cognitive deficits and brain atrophy also develop sooner in alcohol-dependent women than men.<sup>6</sup> Causes of this accelerated progression—“telescoping”—include gender-specific biological differences:

- Women have lower levels of gastric alcohol dehydrogenase—the enzyme that initiates alcohol metabolism—and therefore experience a higher blood alcohol concentration than men drinking the same amount of alcohol.

- Women have less total body water and less capacity to dilute alcohol than men.

These factors lead to higher alcohol concentration per drink delivered to target organs via systemic circulation in women than men.<sup>3</sup>

**‘At-risk’ drinking.** Gender-related physiologic differences have led to different thresholds for defining “at-risk drinking” and binge drinking for men and women (Table 1).<sup>7</sup> Alcohol use also has negative effects on women’s reproductive system and

Table 1

### Different thresholds: Number of drinks\* that increases risk for alcohol-related problems

	Drinks/week	Drinks/day
<b>Men</b>	>14	>4
<b>Women</b>	>7	>3

\*A standard drink is 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of spirits  
Source: Reference 7

menstrual cycle. Women with alcohol dependence have higher rates of sexual dysfunction, irregular menstrual cycles, early menopause, and amenorrhea as compared with nonalcohol-dependent women.<sup>8</sup>

### Motives for drinking

Research suggests different motives for alcohol use in girls and women vs boys and men. Women appear more likely to use alcohol to “self-medicate” negative affect or emotional pain (Box 2, page 54).<sup>9-12</sup> Men are more likely to use alcohol to enhance pleasurable emotional states, “feel high” or because of social pressures to conform.<sup>5</sup>

In a study of >1,200 adolescents, girls age <15 reported higher coping and conformity motives than boys of that age. However, older boys (age 18 to 19) reported more

### Clinical Point

Due to physiologic differences, women’s target organs receive higher alcohol concentrations per drink than men’s



## Alcohol dependence in women

### Clinical Point

When developing a woman's treatment plan, consider the addiction status and drinking patterns of her partner as well

### Box 2

## Women's alcohol use motives: Different than men's?

**Drinking partners.** Compared with men's motives for alcohol use, women's drinking motives are more strongly influenced by their spouse's or partner's drinking patterns. In a large twin study (N = 5,974), 13% of alcohol-dependent women vs 3% of alcohol-dependent men reported that their spouse had a history of alcohol problems.<sup>9</sup> Thus, consider the addiction status and drinking patterns of a woman's partner when developing a treatment plan and relapse prevention strategies.

**Trauma and alcohol use.** Converging lines of evidence suggest that a relationship among trauma, posttraumatic stress disorder, and substance use disorders is particularly important for women. Early

life stress—particularly sexual abuse—is more common in girls than in boys and is associated with the risk of developing substance use disorders.<sup>10</sup>

Women in alcohol treatment programs report more moderate (87%) and severe (40%) intimate partner violence than women in community samples (28% and 8%, respectively), as well as higher rates of childhood physical abuse (37% vs 11%, respectively).<sup>11</sup> Moreover, alcohol abuse places women at risk for repeated victimization and serves to perpetuate a cycle of victimization and addiction.<sup>12</sup> These are critical issues to assess and address when treating women with alcohol dependence.

conformity and coping motives than older girls.<sup>13</sup> With age, drinking for social and enhancement motives increases more among male than female adolescents. Drinking to reduce or manage negative affect is associated with an increased risk of heavy drinking (particularly for adolescent girls), more frequent intoxication, and alcohol dependence.<sup>14</sup> These findings suggest:

- Young women with alcohol use problems may benefit from learning strategies to regulate negative emotions and alleviate depression or anxiety symptoms that may be contributing to their drinking.
- Young men with alcohol use problems may benefit from learning to manage peer pressure and from finding alternate sources of pleasure enhancement.<sup>5</sup>

### CASE CONTINUED

### Depressed and anxious

Ms. F admits to depressed mood, crying episodes, isolation from others, anhedonia, feelings of guilt, low motivation, difficulty concentrating at work, restless sleep, and weight loss. These symptoms recurred soon after she and her husband separated 4 years ago. She denies suicidal thoughts or suicide attempts.

She suffered similar episodes in the past, including when she was breast-feeding and abstinent from alcohol after the birth of her daughter. Her obstetrician treated her depres-

sion with fluoxetine. Problems with anxiety began in high school, especially associated with parties and dating. In college, she often would drink beer before class presentations.

You diagnose alcohol dependence, major depressive disorder, and social phobia. You also ask Ms. F about a history of trauma. She reports that her father was “real harsh” when he was drinking and often hit her and her sister. She also relates being struck by her ex-husband during arguments. Screening with the Clinician-Administered PTSD Scale is negative for posttraumatic stress disorder (PTSD), however.

### Comorbid psychiatric disorders

Gender differences in reasons for alcohol use may be related to women's higher rate of medical and psychiatric comorbidity (*Table 2 page 57*).<sup>6,8,15,16</sup> Vital signs, physical examination, and lab work are helpful for diagnosis and monitoring of medical comorbidities and complications. The gamma-glutamyl transferase (GGT) test for liver disease and carbohydrate deficient transferrin (CDT) test for chronic heavy alcohol consumption are less sensitive and specific in women than in men.<sup>17</sup> Even so, monitoring GGT and CDT results over time may serve as a valuable marker of continued drinking by women.

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**Mood and anxiety disorders** are significantly more common in women than in men among individuals with alcohol use disorders.<sup>15,16</sup> This pattern is not unique to alcohol-dependent persons, however. In the general population:

- women are more likely than men to meet diagnostic criteria for anxiety, depression, bulimia nervosa, and borderline personality disorder
- men are more likely than women to meet diagnostic criteria for antisocial personality disorder.<sup>18</sup>

Mood and anxiety disorders are more likely to precede the onset of alcohol use disorders in women than in men. In a longitudinal study,<sup>19</sup> women with major depression at baseline were 7 times more likely to have alcohol dependence at 2-year follow-up than women without major depression. Men with major depression at baseline did not show an increased risk for developing alcohol dependence over time. This finding suggests a different etiologic relationship between depression and alcohol use disorders for women than for men.

**Suicide risk.** A recent study by Connor et al<sup>20</sup> examined suicidal ideation, planning, and attempts in 3,729 alcohol dependent subjects (35% female) and found an association between female gender and both planned (odds ratio [OR] = 3.4) and unplanned suicide attempts (OR = 3.8). Further research is needed to clarify the relationship between female gender, alcohol dependence, and suicide risk, behaviors, and attempts.

**Anxiety disorders** are the most common psychiatric disorders in women,<sup>21</sup> and social anxiety and social phobia may play a predisposing role in alcohol dependence.<sup>22</sup> Individuals with social anxiety may self-medicate with alcohol as a social lubricant. Some research suggests that anxiety disorders are more severe in alcohol-dependent women than in men with similarly severe alcohol dependence.<sup>22</sup>

**Posttraumatic stress.** Childhood physical and sexual abuse and subsequent PTSD are important risk factors for alcohol abuse

**Table 2**

## Comorbid disorders in women with alcohol dependence

<b>Psychiatric</b>
Posttraumatic stress disorder
Other anxiety disorders (such as panic disorder without agoraphobia, simple phobia, or social phobia)
Major depressive disorder
Cognitive impairment
<b>Medical</b>
Hypertension
Fatty liver disease
Gastrointestinal hemorrhage
Brain atrophy
Reproductive system irregularities
<b>Source:</b> References 6,8,15,16

or dependence in women. Past physical or sexual abuse can complicate treatment and recovery in women because abuse is associated with increased psychiatric symptoms, more complex treatment needs, and poorer treatment outcomes.<sup>23</sup>

Therefore, when assessing and treating alcohol-dependent women, screen for trauma history as well as mood and anxiety disorders. To optimize outcomes, treat these disorders simultaneously with the alcohol use disorder.<sup>24</sup>

### Treatment planning

**Underuse of treatment programs.** Women with alcohol dependence are more likely to seek treatment in primary care or mental health settings, rather than in alcohol treatment settings.<sup>25,26</sup> Women's underuse of alcohol treatment programs is likely related to:

- greater stigma associated with alcohol use for women as compared with men
- socioeconomic factors, including pregnancy, child care, and concerns about child custody issues.<sup>25</sup>

Even so, women who enter treatment for alcohol use disorders appear to benefit as much as men, with similar outcomes, retention, and relapse rates.<sup>25,26</sup>

**Gender-specific treatment?** Women-only treatment programs have been studied because of observed differences in

### Clinical Point

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men's and women's interaction styles and the hypothesis that men's traditional societal dominance could negatively affect women in mixed-gender groups.<sup>25</sup> Better treatment outcomes have been hypothesized if treatment is tailored to address women's unique issues: risk factors for alcohol dependence, course of disease progression, medical problems associated with alcohol dependence, and reasons for relapse.

Gender-specific treatment may provide an environment where women—particularly those with a history of trauma from a male perpetrator—feel safe discussing issues related to their alcohol problems. For practical purposes, these programs also may be more likely to address women's needs for on-site child care, prenatal care, and mental health programming.

Results from investigations of women-specific treatments have been mixed. Some data suggest that women-focused outpatient and residential treatment programs have higher rates of treatment completion compared with traditional programs.<sup>27</sup> Residential programs that allow women to bring their children may have higher rates of retention—a good predictor of better treatment outcomes.

A recent study compared a manual-based 12-session women's recovery group with mixed-gender, manualized group drug counseling (GDC). The women's recovery group focused on gender-specific topics such as relationships, the caregiver role, trauma, comorbid psychiatric conditions (including eating, mood, and anxiety disorders), and the effects of drug and alcohol use on women's health. The women's recovery group was:

- as effective as mixed-gender GDC in reducing substance use during the 12-week treatment
- significantly more effective during the 6-month post-treatment phase.<sup>28</sup>

**Pharmacologic treatment.** Few studies have investigated potential gender differences in response to pharmacologic treatments for alcohol dependence. One trial found long-acting injectable naltrexone less effective in women than men,<sup>29</sup> but other

studies—primarily with small numbers of women—found no gender difference in naltrexone's efficacy.<sup>30</sup> Family history, medication compliance, and side effect profiles need to be studied in greater detail to determine potential gender effects on treatment outcomes with pharmacologic agents.

### CASE CONTINUED

#### Developing a treatment plan

Ms. F identifies 3 triggers for her alcohol use: a stressful day at school, arguments with her ex-husband, and feeling lonely. Because these are high-risk situations for relapse, you incorporate strategies to deal with them into her treatment plan. Other factors to consider:

- whether she requires detoxification
- an FDA-approved medication for alcohol dependence (acamprosate, oral or injectable naltrexone, or disulfiram)
- cognitive-behavioral therapy and medication for major depression and social phobia
- referral to psychosocial support groups (such as Alcoholics Anonymous).

You encourage Ms. F to explore support from her employer, such as an employee assistance program that may help her resume teaching after successful treatment.

Three factors determine the need for detoxification: the course of previous alcohol withdrawals (alcoholic hallucinosis, seizures, or delirium tremens), elevated vital signs or other evidence of autonomic hyperactivity such as diaphoresis or tremors, and the patient's general medical condition. During early recovery, monitor patients closely to assess mood and anxiety symptoms. Blood alcohol tests or GGT and CDT are useful to monitor self-reported abstinence.

Educate patients about common withdrawal symptoms and the typical course of recovery. Refer them to a primary care physician for assessment of medical comorbidities of alcohol dependence. With patients' permission, involve their social support network (family or close friends) in treatment.

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## Related Resources

- National Clearing House for Alcohol and Drug Information. Publications and materials on women and substance abuse. Substance Abuse and Mental Health Services Administration. <http://ncadistore.samhsa.gov/catalogresults.aspx?h=drugs&topic=11>.
- National Institute on Drug Abuse ([www.nida.nih.gov](http://www.nida.nih.gov)). Articles that address women's health and gender differences. [www.drugabuse.gov/NIDA\\_Notes/NN0013.html](http://www.drugabuse.gov/NIDA_Notes/NN0013.html).

### Drug Brand Names

Acamprosate • Campral	Fluoxetine • Prozac
Disulfiram • Antabuse	Naltrexone • Vivitrol, ReVia

### Disclosures

Drs. Payne, Back, Wright, and Hartwell report no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.

Dr. Brady receives research support from Abbott Laboratories, GlaxoSmithKline, Forest Pharmaceuticals, and Wyeth. She is a consultant and speaker for Pfizer Inc., Eli Lilly and Company, Abbott Laboratories, GlaxoSmithKline, and Forest Pharmaceuticals.

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## Bottom Line

Differences in male and female metabolism, biodistribution, and medical consequences of alcohol use suggest a need for gender-specific screening criteria and thresholds for dependence. Screen alcohol-dependent women for mood and anxiety disorders, which often present before an alcohol use disorder. For women as for men, consider FDA-approved medications for alcohol dependence.

## Clinical Point

During early recovery, monitor patients closely to assess mood and anxiety symptoms