Conduct Disorder
# Changes to Conduct Disorder from DSM-IV-TR to DSM-5

<table>
<thead>
<tr>
<th>DSM-IV-TR</th>
<th>DSM-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previously found under: Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence</td>
<td>Now found under: Disruptive, Impulse-Control, and Conduct Disorders</td>
</tr>
<tr>
<td>No Specifier</td>
<td>Specifier for ‘With Limited Prosocial Emotions’</td>
</tr>
</tbody>
</table>
Conduct Disorder

• Found under Disruptive, Impulse-Control, and Conduct Disorders I DSM-5

• Other disorders included in this chapter:
  ◦ Oppositional Defiant Disorder (ODD)
  ◦ Intermittent Explosive Disorder
  ◦ Pyromania
  ◦ Kleptomania
  ◦ Other Specified Disruptive, Impulse-Control, and Conduct Disorder
  ◦ Unspecified Disruptive, Impulse-Control, and Conduct Disorder
Conduct Disorder  

- Essential Feature of CD:
  - Repetitive and persistent pattern of behavior that violates the basic rights of others and major age-appropriate societal norms or rules.
- Must present for at least 3 of the following 15 criteria in the past 12 months, from any of the categories, with at least one criterion present in the past 6 months…

(American Psychiatric Association, 2013)
Aggression to People and Animals

1. Often bullies, threatens, or intimidates others.
2. Often initiates physical fights.
3. Has used a weapon that can cause serious physical harm to others (e.g., a bat, brick, broken bottle, knife, gun).
4. Has been physically cruel to people.
5. Has been physically cruel to animals.
6. Has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery).
7. Has forced someone into sexual activity.
Conduct Disorder

• Destruction of Property
  8. Has deliberately engaged in fire setting with the intention of causing serious damage.
  9. Has deliberately destroyed others’ property (other than by fire setting).

• Deceitfulness or Theft
  10. Has broken into someone else’s house, building, or car.
  11. Often lies to obtain goods or favors or to avoid obligations (i.e., “cons” others).
Conduct Disorder

12. Has stolen items of nontrivial value without confronting a victim (e.g., shoplifting, but without breaking and entering; forgery).

13. Often stays out at night despite parental prohibitions, beginning before age 13 years.

14. Has run away from home overnight at least twice while living in the parental or parental surrogate home, or once without returning for a lengthy period.

15. Is often truant from school, beginning before age 13 years.
Onset types:

- **Childhood-onset type**: Individuals show at least one symptom characteristic of conduct disorder prior to age 10 years.

- **Adolescent-onset type**: Individuals show no symptom characteristic of conduct disorder prior to age 10 years.

- **Unspecified onset**: Criteria for a diagnosis of conduct disorder are met, but there is not enough information available to determine whether the onset of the first symptom was before or after age 10 years.
Conduct Disorder

• Specifier:
  ◦ **With Limited Prosocial Emotions**: To qualify for this specifier, an individual must have displayed at least two of the following characteristics persistently over at least 12 months in multiple relationships and settings:
    1. Lack of remorse or guilt
    2. Callous – lack of empathy
    3. Unconcerned about performance
    4. Shallow or Deficient Affect

• Current Severity: Mild, moderate, or severe

• [What is Conduct Disorder?](#)
Prevalence Rate of CD

- 2% - more than 10%
- Median = 4%
- 3:1 male to female
- Appears to be fairly consistent across various countries
- Rise from childhood to adolescence
- Per the DSM-IV-TR:

“The prevalence of Conduct Disorder appears to have increased over the last decades and may be higher in urban than in rural settings. Rates vary widely depending on the nature of the population sampled and methods of ascertainment. General population studies report rates ranging from less than 1% to more than 10%. Prevalence rates are higher among males than females.”
Onset of CD

- Onset can occur as early as preschool years
- Significant symptoms usually emerge during middle childhood – middle adolescence
- ODD is a common diagnosis prior to the childhood-onset type of CD
- Onset is rare after 16 years of age
- Adolescent-onset/diagnosis with more mild symptoms likely to remit by adulthood
Comorbid DSM-5 Disorders

- Oppositional defiant disorder
- Attention-deficit/hyperactivity disorder
- Depressive disorder
- Bipolar disorder
- Specific learning disorder
- Anxiety disorders
- Substance-related disorders
DSM-V Clinical Model of CD

**Genetic Predisposition**

**Environmental Influences:**
- Family & Community level risk factors

**Severity:**
- Mild
- Moderate
- Severe

**Specifier, ‘With limited prosocial emotions’:**
- Lack of remorse or guilt
- Callous – lack of empathy
- Unconcerned about performance
- Shallow or deficient affect

**Core Features:**
- Aggression toward people or animals
- Destruction of property
- Deceitfulness or Theft
- Serious violation of rules

**Secondary Features:**
- Trait negative emotionality
- Poor self-control
- Irritability/temper outbursts
- Insensitivity to punishment
- Thrill seeking
- Recklessness

**Environmental Influences:**
- Family & Community level risk factors
Literature Review
Developmental Risks

- 40 – 70% of adolescent boys with CD will develop APD by early adulthood (Weis, 2008)
  - Deceitfulness, property destruction, theft
- Females with CD at risk for internalizing disorders
  - Depression, anxiety, BPD (Weis, 2008)
- Strong association between CD and substance use (Loeber, Burke, Lahey, Winters & Zera, 2000).
- School discipline problems (American Psychiatric Association, 2013)
Developmental Risks

• More likely to be sexually active (Brown et al., 2010)
  ◦ Longitudinal study conducted by Ramrakha et al., (2007), symptoms of CD, along with antisocial behavior in childhood and adolescence -> sexual risk behaviors in adulthood (variance = 64%).

◦ Females:
  • Prostitution/Early pregnancy
  • Likely to find antisocial partners
    • May increase risk for DBD among offspring
  • (Loeber et al., 2000)
Etiology - Genetic

- Cappadocia et al., (2009) cites multiple studies that support a genetic aspect to the development of CD (i.e., Deater-Deckard, Reiss, Hetherington, & Plomin, 1997; Eaves, Silberg, Meyer, Maes, & Simonoff, 1997; Edelbrock, Rende, Plomin, & Thompson, 1995; Kim-Cohen, Caspi, Taylor, Williams, & Newcombe, 2006).

- Individual differences in externalizing behaviors - highly heritable at 70% (Nonshared Environment in Adolescent Development Project; Deater-Deckard et al., 1997).
Etiology – Genetic CONTINUED

• Virginia Twin Study of Adolescent Behavioral Development heritability estimates:
  ◦ 27–74% - parent interviews and questionnaires &
  ◦ 24–36% - self-report interviews and questionnaires with the twins (Eaves et al., 1997)
  ◦ Large sample of Caucasian twin set aged 8-16 years.

• Edelbrock et al. found significant genetic influence on aggressive behaviors (1995).
  ◦ Correlations of .75 for MZ twins and .45 for DZ twins
  ◦ Sample of 99 same-sex twins aged 7–15 years
Cappadocia et al., cites several studies that show poor parenting is associated with the disruptive behaviors of CD (2009).

- Less involved
- More lenient monitoring
- Poor parent-child conflict resolution
- Inconsistent discipline

(Frick et al., 1992; Haapasalo & Tremblay, 1994; Wasserman et al., 1996).
Etiology – Environmental

- The *DSM-5* also cites these additional family-level risk factors:
  - Parental rejection and neglect
  - Harsh discipline
  - Physical or sexual abuse
  - Early institutional living
  - Frequent changes of caregivers
  - Large family size
  - Certain kinds of familial psychopathology
  - *(American Psychiatric Association, 2013)*
Etiology – Social Factors

- CD diagnosis more prevalent in children from families of low SES (8%, n=87) (Lahey et al., 1999).

- Adolescents with CD from low SES backgrounds more likely to develop APD in adulthood.
  - Lahey et al. (2005): 65%

- Loeber et al., (2000) cites multiple studies that found CD more common in high crime-rate areas (Lahey et al., 1999, Loeber and Farrington, 1998; Sampson et al., 1997).

- Prevalence rates of CD likely highest in worst inner-city neighborhoods (Loeber et al., 2000).
Etiology – Social Factors

- Poor/disadvantaged neighborhoods
- Negative community influences:
  - Drug availability
  - Association with adults that partake in crimes
- Parent, peers, and neighborhood are all associated factors of CD (Cappadocia et al., 2009)
- Peer rejection
- Association with deviant peers (Cappadocia et al., 2009).
Etiology - Neurological

• Structural deficits in brain areas:
  ◦ Frontal and temporal areas
    • Reduced right temporal lobe and right temporal grey matter volume (Kruesi, Casanova, Mannheim & Johnson-Bilder, 2004; Matthys, W., Vanderschuren, L. J., & Schutter, D. G., 2013).
  ◦ Limbic system:
    • Amygdala and anterior cingulate cortex
    • Less activation in left amygdala and deactivation of ACC (Sterzer et al., 2005)
Etiology – Neurological

- Lower serotonin (5-HT) levels (Cappadocia et al., 2009)
  - Associated with aggression
- Lower ANS functioning
  - Decreased resting heart rate and skin conductance
  - Meta-analysis of 40 studies showed low resting HR best replicated biological correlate of CD:
    - average effect size of -.44 (Ortiz & Raine, 2004).
- HPA Axis involvement
  - Lower levels of cortisol have been associated with CD
Structural Brain Differences - Males

A. HC > Combined CD

B. HC > EO-CD

C. HC > AO-CD

D. Gray Matter Volume Parameter Estimates at (x=30, y=4, z=-20)

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Structural Brain Differences - Females

Table 2. Group differences in grey matter volume between the female conduct disorder group and healthy control subjects

<table>
<thead>
<tr>
<th>Cerebral regions</th>
<th>Hemisphere</th>
<th>Local maxima, z</th>
<th>Number of significant voxels in cluster</th>
<th>MINI coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC &gt; CD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anterior insula</td>
<td>L</td>
<td>4.00*</td>
<td>278</td>
<td>-39 3 -2</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>3.82*</td>
<td>295</td>
<td>35 3 -3</td>
</tr>
<tr>
<td>Striatum</td>
<td>R</td>
<td>3.80*</td>
<td>Same cluster as above</td>
<td>34 2 -2</td>
</tr>
<tr>
<td>Striatum</td>
<td>R</td>
<td>3.64*</td>
<td>210</td>
<td>22 3 -3</td>
</tr>
<tr>
<td>Ventral striatum</td>
<td>R</td>
<td>3.32</td>
<td>Same cluster as above</td>
<td>15 9 -11</td>
</tr>
<tr>
<td>Orbitofrontal cortex</td>
<td>R</td>
<td>3.49</td>
<td>10</td>
<td>56 24 -11</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>3.47</td>
<td>81</td>
<td>50 39 -17</td>
</tr>
<tr>
<td>Dorsolateral FFC</td>
<td>R</td>
<td>3.49</td>
<td>75</td>
<td>40 38 31</td>
</tr>
<tr>
<td>Precentral gyrus</td>
<td>L</td>
<td>3.44</td>
<td>25</td>
<td>-53 -16 37</td>
</tr>
<tr>
<td>Mid-occipital cortex</td>
<td>R</td>
<td>3.30</td>
<td>97</td>
<td>46 -75 0</td>
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<tr>
<td>Inferior frontal gyrus</td>
<td>R</td>
<td>3.37</td>
<td>49</td>
<td>62 21 6</td>
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<tr>
<td>Precuneus</td>
<td>L</td>
<td>3.35</td>
<td>31</td>
<td>-16 -70 60</td>
</tr>
<tr>
<td>CD &gt; HC</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Middle temporal gyrus</td>
<td>R</td>
<td>3.57</td>
<td>87</td>
<td>54 -17 -23</td>
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<tr>
<td>Orbitofrontal cortex</td>
<td>R</td>
<td>3.44</td>
<td>27</td>
<td>15 32 -11</td>
</tr>
<tr>
<td>Precentral gyrus</td>
<td>R</td>
<td>3.37</td>
<td>56</td>
<td>35 -6 30</td>
</tr>
</tbody>
</table>

CD, conduct disorder; HC, healthy controls; MINI, Montreal Neurological Institute; FFC, prefrontal cortex.  
* p < .05, Family-Wise Error (small-volume correction); p = .06, Family-Wise Error (small-volume correction).  
Grey matter reductions in all other regions met the criteria of p < .001, uncorrected, for >10 contiguous voxels.
Gender Differences

• Different symptom clusters can be noted between sexes.
  ◦ Males: Physical aggression:
    • Fighting, stealing, vandalism, and school discipline problems (Loeber et al., 2000).
  ◦ Females: Indirect, verbal, and relational aggression:
    • Alienation, ostracism, and character defamation aimed at ‘friends’ (Loeber et al., 2000)
    • Lying, truancy, running away, substance use, and prostitution (Maughan et al. 2004)


# Gender Differences

LOEBER ET AL.

## Table 2

Prevalence of ODD and CD in Community Studies

<table>
<thead>
<tr>
<th>Key Reference and Setting</th>
<th>Population Base</th>
<th>Informant (Time Window)</th>
<th>Diagnostic Instrument</th>
<th>DSM (Impairment, I)</th>
<th>Age (yr)</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Boys Girls</td>
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<td></td>
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<td></td>
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<td>ODD CD ODD CD</td>
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<tr>
<td>Cohen et al. (1993b);</td>
<td>975</td>
<td>C, P</td>
<td>DISC</td>
<td>III-R (I)</td>
<td>10–13</td>
<td>14.2 16.0 10.4 3.8</td>
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<tr>
<td>upper New York State</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14–16</td>
<td>15.4 15.8 15.6 9.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17–21</td>
<td>12.2 9.5 12.5 7.1</td>
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<tr>
<td>Loeber et al. (1998a);</td>
<td>1,517</td>
<td>C, P</td>
<td>DISC</td>
<td>III-R</td>
<td>7</td>
<td>2.2 5.6</td>
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<tr>
<td>Pittsburgh</td>
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<td></td>
<td></td>
<td></td>
<td>11</td>
<td>4.8 5.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
<td>5.0 8.3</td>
</tr>
<tr>
<td>Kashani et al. (1987);</td>
<td>150</td>
<td>C, P</td>
<td>DICA</td>
<td>III-R (I)</td>
<td>14–16</td>
<td>9.3 8.0</td>
</tr>
<tr>
<td>Columbia, MO</td>
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<tr>
<td>Feehan et al. (1994);</td>
<td>930</td>
<td>C</td>
<td>DISC</td>
<td>III</td>
<td>11</td>
<td>3.6 2.6 2.1 0.8</td>
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<td>Dunedin, New Zealand</td>
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<td></td>
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<td>III-R (I)</td>
<td>18</td>
<td>8.8* 2.1*</td>
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<tr>
<td>Offord et al. (1987);</td>
<td>2,674</td>
<td>C (aged 12–16), P</td>
<td>Ratings</td>
<td>III</td>
<td>4–11</td>
<td>6.5 1.8</td>
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<td>Ontario, Canada</td>
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<td>12–16</td>
<td>10.4 4.1</td>
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<td>Costello and Angold</td>
<td>4,500</td>
<td>C, P</td>
<td>CAPA</td>
<td>III-R</td>
<td>9–15</td>
<td>2.1 4.8* 1.5 1.2*</td>
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<td>(unpublished, 1998);</td>
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<td></td>
<td></td>
<td>IV</td>
<td>4.5</td>
<td>3.9 2.5</td>
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<tr>
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<td></td>
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<tr>
<td>Fergusson et al. (1993);</td>
<td>965</td>
<td>P</td>
<td>Ratings</td>
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<td>1.8 3.3</td>
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<td>Christchurch, New Zealand</td>
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<td></td>
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<td>5.1 1.8</td>
</tr>
</tbody>
</table>

*Note: ODD = oppositional defiant disorder; CD = conduct disorder; C = child; P = parent; DISC = Diagnostic Interview Schedule for Children; DICA = Diagnostic Interview for Children and Adolescents; CAPA = Child and Adolescent Psychiatric Assessment.

* Prevalence estimated from paper.

* Three-month prevalence over 4 waves of data.
Developmental Pathways Model

- Loeber & Hay’s developmental pathways model (1994)
Callous-Unemotional Traits

- Lack of guilt, lack of concern about feelings of others, lack of concern about performance in important activities and shallow/deficient affect
  - Similar traits used to define construct of psychopathy in adults
- Deficits in processing negative emotional stimuli
- More fearless and thrill-seeking
- Lower levels of anxiety
- More severe, stable, and aggressive pattern of behavior
• In a UK study of 7,977, aged 5-16 (2009):
  ◦ 2% diagnosed with CD
  ◦ Of those, 46% showed 2 or more C/U traits
  ◦ Those with C/U traits – more severe behavioral disturbance

• In a sample of 1,862 high-risk girls, aged 6-8:
  ◦ Of those that were diagnosed with CD, 26% met criteria for CU
  ◦ Those with CU showed more bullying and relational aggression

  (Frick, 2012 referencing Pardini, Stepp, Hipwell, Stouthamer-Loeber, & Loeber, in press)
C/U Traits & Outcomes

- A study conducted by McMahon, Kotler, and Witkiewitz (2010) found that:
  - N = 891
  - Higher levels of C/U traits predicted:
    - Higher levels of self-reported delinquency
    - More juvenile and adult arrests
    - Greater number of APD criteria met
    - Higher likelihood of APD diagnosis
C/U Traits & Prevention

- Frick (2012):
  - Interventions need to be comprehensive, individualized, and intense
  - Youths with CU traits less likely to respond and participate in typical treatment
    - Cognitive-behavioral treatment
    - Parent management training
    - School consultation
    - Peer relationship development
    - Crisis management
    - Medication for ADHD (if applicable)
  - (Kolko & Pardini, 2010)
C/U Traits & Prevention

- Munoz, Pakalniskiene, and Frick (2011):
  - Parents’ monitoring behaviors influence conduct problems?
  - Conduct problems influenced how parents monitored behavior?
    - Important for high levels of CU traits as that may influence parental behavior more than children without
  - 75 parents & 81 children providing data
    - Parents with poor knowledge of child’s activities – controlled them less
    - Children less likely to provide information to parents
    - More resistant to punishment by parents
  - Prevention – target early relationship between parent and child
Other Models of CD

- Cappadocia et al.’s hypothesized developmental model:
Revised Model of CD

**Biological Influences**
- Genetics

**Neurological Impairments/ C-U Traits**
- Structural brain differences
- Neurochemical dysregulation
- Lack of remorse or guilt
- Callous – lack of empathy
- Unconcerned about performance
- Shallow or deficient affect

**Environmental Influences:**
- Family & Community level risk factors
- SES-related factors

**Comorbidity**
- ODD
- ADHD

**Core Features:**
- Poor self-control
- Irritability/temper outbursts
- Insensitivity to punishment
- Thrill seeking
- Recklessness

**Secondary/Features:**
- Aggression toward people or animals
- Destruction of property
- Deceitfulness or Theft
- Serious violation of rules

**Severity:**
- Mild
- Moderate
- Severe

**Antisocial Personality Disorder**
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- What is Conduct Disorder? [Video file]. Retrieved from http://www.youtube.com/watch?v=g58qUHEq6fU