

# Contents

<b>Acknowledgements</b>	<b>iii</b>
<b>Preface</b>	<b>iv</b>
Endnote .....	v
<b>The Lure of Addiction</b>	<b>1</b>
Endnotes .....	9
<b>Addiction: Disease? Choice? Compulsion?</b>	<b>10</b>
How Much of a Problem Is Drug Addiction? .....	10
Preliminary Considerations: Disease or Choice? .....	12
Compulsion .....	16
What is Addiction? .....	17
How Do We Explain the Compulsion to Take Drugs? .	20
Endnotes .....	24
<b>Prejudice and the Law</b>	<b>26</b>
Endnotes .....	45
<b>How Do Drugs Affect Brain Function?</b>	<b>48</b>
Neurons Turn on Brain Circuits .....	50
How Do Neurons Turn on? .....	52
Sending on the Information .....	52
A Closer Look .....	56
Neural Pathways in the Brain.....	59
What are Neurotransmitters, Anyway? .....	61
How Do Drugs Change Activity in Neurons? .....	63
How Do We Classify Drugs That Influence Neurons? .	67
Endnotes .....	70
<b>Section 2</b>	
<b>Brain Changes in Addiction</b>	<b>72</b>
<b>The Weapons of Mass Destruction – The Downers</b>	<b>73</b>
The Term “Narcotics” .....	73
Opioid Drugs.....	74
Sedative-Hypnotics .....	77
Alcohol .....	77
Endnotes .....	90
Glossary.....	95

<b>The Uppers...</b>	<b>96</b>
Psychomotor Stimulants .....	96
Amphetamine.....	96
Methamphetamine & Crystal Meth.....	97
Cocaine & Crack-Cocaine.....	98
Ecstasy (MDMA).....	100
Nicotine .....	102
Caffeine .....	108
What's Next? .....	111
Endnotes .....	111
Glossary.....	115
<b>Drugs and the Pleasure System</b>	<b>117</b>
The Reward System.....	118
Dopamine Systems and Making Choices .....	121
Activating the Pleasure Pathway.....	132
Chapter Summary – How the Pleasure System Works	136
Endnotes .....	136
Glossary.....	138
<b>Taking the Drugs:</b>	
<b>The Brain Begins the Struggle</b>	<b>140</b>
Cocaine and Crack Cocaine.....	142
Amphetamine and Meth-Amphetamine.....	145
Alcohol.....	146
Opioids .....	150
Cannabis .....	156
Nicotine .....	158
Caffeine .....	162
Concluding Comments .....	164
Endnotes .....	165
Glossary.....	171
<b>The Brain Reduces the Pleasure</b>	<b>172</b>
Tolerance and Withdrawal Symptoms.....	172
Tolerance Develops .....	177
After Repeated Doses, Why is the Peak So Reduced? .	179
The Protective Effect of the Counter Response .....	179
Why Continue to Take the Drug?.....	181
Another Approach to Addiction.....	185
Neuroadaptations – The Brain Fights Back .....	187
Withdrawal Symptoms are Opposite to Drug Effect....	189

Endnotes .....	190
Glossary.....	193
<b>Now Relapse is Likely    194</b>	
The Problem of Relapse .....	194
Plasticity – The Dark Side of Addiction .....	196
Endnotes .....	214
<b>How Long Will the Hypofrontality Last?    223</b>	
How Do Brain Circuits Change? .....	223
How Long Does LTP Last? .....	227
How Long Do Cravings Last? .....	228
Are the Cognitive Impairments Permanent? .....	229
The Story So Far .....	231
Where To Now? .....	232
Endnotes .....	233
<b>Section 3</b>	
<b>Behavioural Addictions, Risk Factors for Addiction, and Possible Solutions    237</b>	
<b>Are Behavioural Addictions Like Drug Addictions?    238</b>	
Gambling.....	238
Internet Related Addictions .....	245
Behavioural Addictions and the Pleasure System .....	254
What About Cognitive Effects?.....	256
Other Behavioural Addictions.....	258
Concluding Comments .....	268
Endnotes .....	268
<b>Why Resort to Drugs?    280</b>	
The Myth of Drug-Induced Addiction .....	280
Why Self-Medicate? What’s Missing? .....	296
Why Aren’t All Who Experience Trauma Addicted? ....	305
Endnotes .....	314
<b>How Do We Deal With this Problem?    322</b>	
Is Decriminalization the Answer? .....	326
Who Has Opted for Decriminalization? .....	328
Problems with Decriminalization? .....	333
What About Legalization?.....	334
What Do We Conclude?.....	344
Endnotes .....	356