


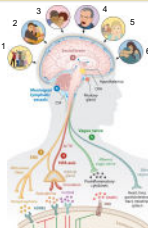



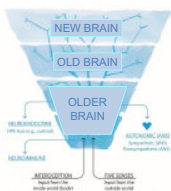
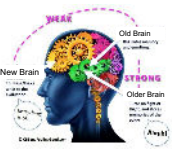
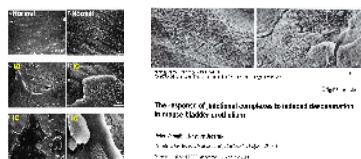
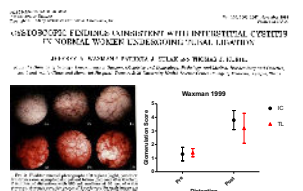
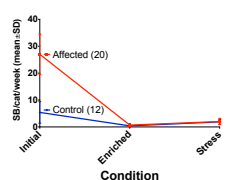
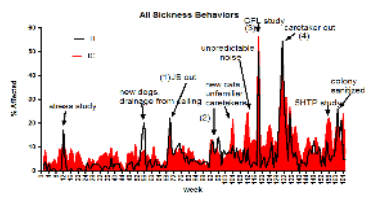
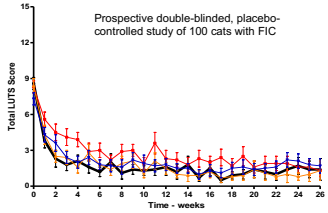
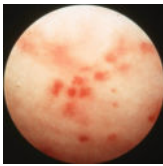


#	Image	Notes
1	<p data-bbox="298 359 529 457">Social Factors in Chronic Primary Pain Conditions: Lessons from Our Feline Companions</p>  <p data-bbox="315 516 638 552">C. A. Tony Buffington, DVM, PhD Clinical Professor UC Davis SVM drbuffcat@gmail.com</p>	<p data-bbox="751 233 1406 625">Hello and welcome everyone. Thanks to the ICA for inviting me, and to you for joining us! As you may have heard, the International Association for the Study of Pain recently classified Interstitial Cystitis as a Chronic Primary Pain Condition, one of a group of Chronic Overlapping Pain Conditions (COPC). Despite the confusing names, some controversy over the classification, I hope this change will afford us the opportunity to think a little differently about how to provide better care for people with IC based on what I've learned from cats with the condition.</p>
2	<p data-bbox="440 963 586 995">Who am I?</p> <ul data-bbox="282 1037 513 1224" style="list-style-type: none"> • Veterinary clinical scientist • 40 years of research & clinical experience with IC in domestic cats • 30 years of studies of people with IC, FM, & IBS • No conflicts to disclose • A "Crazy Old Uncle"? 	<p data-bbox="751 638 1414 1564">I am a veterinary clinical scientist. I don't have IC, but I have been trying to understand it since 1983, when I began studying lower urinary tract problems in cats as a veterinarian and graduate student at UC Davis. I will use the term IC today because you'll all know what I mean and because "interstitial cystitis" named an organ before the condition was understood well enough to do so. Unfortunately I think this name, like that of many COPCs like irritable bowel syndrome or endometriosis, focuses too much on one organ and not enough on all the rest of the individual. Imagine where we might be if the study of jaundice, the yellow pigment seen in the skin of patients with liver disease, was the research and clinical responsibility of dermatologists. There also are now at least 14 different names for IC, but none has led to reliably better outcomes, and most seem to have more to do with medical sociology than with medical science. I have had a career-long research and clinical interest in IC in cats, and have also participated in studies of IC, IPS, and FM in humans. I have no financial conflicts to disclose, and I intend to talk with you today as if you were a family member that I love, believe, and trust who has come to me, your crazy old uncle the veterinary scientist, to ask for help with your IC symptoms.</p>
3	<p data-bbox="444 1570 583 1602">Disclaimer</p> <p data-bbox="298 1619 732 1713">This talk is for educational and positive support purposes only. Nothing in it is intended to replace or substitute for professional medical or health advice, diagnosis, or treatment.</p> <p data-bbox="293 1745 737 1818">Please consult a qualified healthcare provider with specific medical questions about your (or your cat's) health.</p>	<p data-bbox="751 1577 1406 1900">Here is my disclaimer. I also will "Render unto Caesar the things that are Caesar's" and not recommend any of the many drug therapies for IC, because I haven't used most of them, and, as far as I know, these drugs have not been found to be very effective in when studied in properly conducted, prospective, randomized, placebo-controlled trials.¹ I have provided (these) notes so you can see some of the references I used to prepare this talk.</p>




4	<p style="text-align: center;">Plan</p> <ul style="list-style-type: none"> • Introduction • What we learned from cats • How this might help people with IC • My hope for you 	<p>I will begin with brief definitions of COPCs and social factors. Then I will share some of what we have learned from our research and clinical experience with cats diagnosed with IC, followed by what these studies might mean for people with IC, and finish with a menu of resources for you to consider for yourself. This will not be a long presentation, after which I will try to answer your questions and hear your comments and ideas</p>																				
5	<p>Chronic Overlapping Pain Conditions (COPCs)</p> <table border="1" data-bbox="324 556 665 766"> <thead> <tr> <th>Condition</th> <th>Millions</th> </tr> </thead> <tbody> <tr> <td>Chronic Fatigue Syndrome</td> <td>4</td> </tr> <tr> <td>Vulvodynia</td> <td>6</td> </tr> <tr> <td>Fibromyalgia</td> <td>6</td> </tr> <tr> <td>Endometriosis</td> <td>6.3</td> </tr> <tr> <td>IC</td> <td>8</td> </tr> <tr> <td>Tension + Migraine Headache</td> <td>14</td> </tr> <tr> <td>Idiopathic Low Back Pain</td> <td>20</td> </tr> <tr> <td>Temporomandibular disorders</td> <td>35</td> </tr> <tr> <td>Irritable Bowel Syndrome</td> <td>44</td> </tr> </tbody> </table>	Condition	Millions	Chronic Fatigue Syndrome	4	Vulvodynia	6	Fibromyalgia	6	Endometriosis	6.3	IC	8	Tension + Migraine Headache	14	Idiopathic Low Back Pain	20	Temporomandibular disorders	35	Irritable Bowel Syndrome	44	<p>This is a list of the most common chronic overlapping pain conditions.² While some people will only develop one of these, others will develop more of them over their lifespan. Research estimates suggest that each of these conditions affect from 4 to 44 million people in the US - IC affects some 8 million. Overall, they may affect more than 140 million Americans, so chronic pain ins a very large problem.</p>
Condition	Millions																					
Chronic Fatigue Syndrome	4																					
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6	<p>We are an <i>ultra-social</i> mammal!</p>  <p>What we need:</p> <ol style="list-style-type: none"> 1.Connection 2.Validation 3.Intimacy <p>Social injuries:</p> <ol style="list-style-type: none"> 4. Conflict 5. Exclusion 6. Loneliness 	<p>We humans are the most social of all mammals. Social connection is up there in importance with food and safety for our survival. We survived evolution by connecting with other humans to forage, hunt, and fight off enemies together.^{3,4} This figure shows us what some of our most important social needs are, and how social injuries can make chronic pain worse.⁵ It also shows some of the physiology involved, which we will talk more about.</p>																				
7	<p>What we Learned from Cats</p> <p>NIH Funded Studies</p> <ul style="list-style-type: none"> • Cats donated by owners • Housed in Univ. Colony • Studied • Euthanized or adopted 	<p>With that brief introduction, let's talk about what we learned from cats with IC. We got an NIH grant to study pet cats as a naturally occurring model of IC in 1993. Owners who were thinking of euthanizing their cats for severe IC symptoms were invited to donate them to us at Ohio State for study. We housed the cats in an environmentally enriched colony to study them, after which the affected cats were euthanized and the control cats were adopted out. Dr. Judi Stella, the woman pictured here, is one of the best observers of cat behavior around. She took charge of the colony, and made sure the cats felt safe around her. She took over most of the care of the cats, cleaning their cages and interacting with them while she made and recorded observations of 30-40 cats twice daily every day for some 3 years!^{6,7}</p>																				

<p>8</p>	<p>What we Learned from Cats</p> <ol style="list-style-type: none"> 1. Both sexes, 8 weeks -15 years. 2. Moderately-severely affected. 3. "Heavy record" cases. 4. Flares after changes. 5. Glomerulations ≠ symptoms. 6. Signs ↓ in enriched colony. 	<p>We studied cats from kittens to 15 years of age. Since they were no longer acceptable pets for their owners, most had moderate to severe symptoms. They also had many other health problems, cat COPCs. These are sometimes called "heavy record cases", due to the number of problems, which were diagnosed before the cat developed IC. Some also had flares of their COPCs after changes in the colony routine, and using cystoscopy we learned that their lesions didn't equal symptoms. Maybe most importantly, we learned that all of their health problems largely resolved within 6 months of living in Judi's colony,^{6,8} so we thought that the bladder might be a victim of some physiological problem rather than the cause.</p>
<p>9</p>	<p>What we Learned from Cats</p> <p>↑ Central Threat Response System (CTRS)</p> <ul style="list-style-type: none"> • ↑ Startle responses • ↑ SNS/PSNS • ↓ HF-HRV • ↑ Inflammation • ↓ Restraint 	<p>These results led us to study the Central Threat Response System. When we did, we found increases in sensory sensitivity, the cats were easily startled just like some people with IC, sympathetic autonomic activity and inflammation, and decreases in endocrine restraint of the CTRS, which revealed increased activity of the system in the IC cats that were not present in the control cats, and that the changes largely normalized when the IC cats lived in our colony. This led us to think that the changes were not due to structural damage to the CTRS, but that it was not functioning normally for some reason.⁶ Given its importance to IC and other COPCs, let me describe the CTRS to you a bit more.</p>
<p>10</p>	<p>What is the CTRS?</p> <p>Ancient protector</p> <ul style="list-style-type: none"> • Predicts dangers • Responds for survival <ul style="list-style-type: none"> • Autonomic • Endocrine • Immune • Freeze, Flight, Fight 	<p>The CTRS is one of our oldest protectors, it is at least 500 million years old.⁹ In contrast, modern humans appeared ~ 100,000 years ago,¹⁰ so if years were seconds, the CTRS appeared about 16 years ago, whereas modern humans appeared ~ yesterday.</p> <p>The CTRS evolved to enable animals to predict danger from signals both inside and outside of their bodies so they could take action to protect themselves from injury, infection, and toxic foodstuffs; we wouldn't have survived if our ancestors had to be bitten by a tiger to know that something hurt! Note that, as shown in the figure, this is all centered in the oldest parts of our brain, which can take over from our newer, slower and more rational parts. The CTRS still responds to both old and new danger signals using the autonomic, endocrine and immune systems, and directing flight, fight, and freeze body behaviors to help us survive.</p>






<p>11</p>	<p style="text-align: center;">Where is the CTRS?</p> <p>So are you saying it is all in my head?!</p> <p><input type="checkbox"/> Yes, if "it" is your brain. <input type="checkbox"/> No, if "it" is exclusion, blame, or invalidation (it's in theirs)</p> 	<p>Now I imagine that someone listening might be thinking, "Wait, are you saying it's all in my head?!?" Well, Yes, if "it" is your brain (and your body), But no, if "it" is exclusion, blame, or invalidation (then it's in their head).¹¹ I wish we could change our response to people who say this by replying, "Why yes, it is, because my brain it in my head, where is yours?) or "well if you know where it is, do something, get it out!" You can probably come up with better ones than these; when you do, please share them!</p>
<p>12</p>	<p style="text-align: center;">Can the CTRS affect the bladder?</p>  <p>The report of glomerulations to detect dysenergetics in people, dogs and cats.</p>	<p>Now that you know what the CTRS is, where it's located, and what it does for us, can it affect the bladder? Yes, it can, and this has been known for at least 20 years. We published the pictures of the surface of the bladder on the left in 2000.¹² The same month, the pictures on the right were published, which came from the bladders of mice that were exposed to normal light for ~ 48 hours, which activated their CTRS.¹³ This also is an ancient survival response, which may have evolved to protect the bladder from infection.</p>
<p>13</p>	<p style="text-align: center;">Can the CTRS affect the bladder?</p>  <p>Woman 1999</p>	<p>And it was already known by then that "glomerulations" could be found in the bladders of both women¹⁴ and cats¹⁵ without IC symptoms.</p>
<p>14</p>	<p style="text-align: center;">Colony Study Outcomes</p> 	<p>This is a summary graph of some of what happened to cats in our research colony, with time on the X axis and health problems on the Y axis. The 20 IC cats entered the colony with many more health problems than the 12 control cats did, although they had some too, possibly from the stress of transport and strange surroundings, but after ~ 6 months, the difference in responses to stressors between healthy and affected cats was gone.⁷</p>
<p>15</p>	<p style="text-align: center;">Colony Study – Details</p> 	<p>This graph shows some details of the results described in the previous slide. Data are from the Healthy (Black line) cats and cats with IC (red fill) in Dr. Stella's colony at OSU. The responses of cats with IC were similar to those of healthy control cats. I have labeled some of the threats; research studies, changes in caretakers and animals, Judi's (rare) absences, etc.</p>

<p>16</p>	<p>Elmiron study in client-owned cats</p>  <p>Prospective double-blinded, placebo-controlled study of 100 cats with FIC</p>	<p>This graph is from an industry-funded study we did to tested 4 doses of Elmiron, which was approved for treatment of IC by the FDA in 1996, in cats with IC the following year.¹⁶ Note that all groups improved, with no difference among the groups. The heavy black line shows the results in placebo-treated cats. The sponsor was so impressed with the results that they blocked publication of them for seven years, so the results were never published in the peer-reviewed literature beyond a 2009 abstract. Essentially the same results were published for human trials of Elmiron in 2014-15,^{17,18} and now there are concerns about the potential for eye injury from the drug in humans.¹⁹</p>										
<p>17</p>	<p>Other Client Study Outcomes</p> <ul style="list-style-type: none"> • All treatments well tolerated • Adverse events rare • Flares in ~ 40% • Client – ≥ 66% mod. to highly effective • Cystoscopy – ≥ 64% improved 	<p>Cats also improved on other outcomes that we measured, as you can see on this slide, again with no difference between groups.¹⁶ Flares occurred, as they did in our colony cats, but both client reports and cystoscopy showed clinically relevant improvements in all 4 doses tested, including zero. The doses we used translate to ~75, 300 and 600 mg/day for a human.</p>										
<p>18</p>	<p>Conclusions from Cats</p> <p>“Causes remain unknown”</p> <table border="1" data-bbox="321 1220 678 1352"> <thead> <tr> <th>Factors</th> <th>Examples</th> </tr> </thead> <tbody> <tr> <td>Predisposing</td> <td>Genetic, Familial, Temperament, Life events that sensitize the CTRS.</td> </tr> <tr> <td>Precipitating</td> <td>Survival threat that activate the CTRS.</td> </tr> <tr> <td>Perpetuating</td> <td>Internal and/or External threats</td> </tr> <tr> <td>Protective</td> <td>Safety, Predictability, & Choice</td> </tr> </tbody> </table>	Factors	Examples	Predisposing	Genetic, Familial, Temperament, Life events that sensitize the CTRS.	Precipitating	Survival threat that activate the CTRS.	Perpetuating	Internal and/or External threats	Protective	Safety, Predictability, & Choice	<p>Many research and clinical articles about IC and other COPCs claim that "the causes remain unknown". This can sound hopeless, but it shouldn't. For example, citrus was known to prevent scurvy for more than 500 years vitamin C deficiency, was discovered to be the cause in the early 1900s.^a</p> <p>An alternative approach called the "4P" model for understanding disease development, maintenance, and treatment,^{20,21} as shown in this table might help, which focuses on the CTRS. A variety of Predisposing and Precipitating factors have been identified in both people and cats with IC that may be useful for prevention, and we may be able to use Perpetuating/Preventive factors clinically until cause(s) and/or reliably effective drugs are identified. Such an approach may be able to change the mindset of health care givers toward asking, "What happened to you?" instead of, "What's wrong with you?"</p>
Factors	Examples											
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Protective	Safety, Predictability, & Choice											

^a [Scurvy](#)

<p>19</p>	<p>Treating IC in Cats</p> <ul style="list-style-type: none"> <input type="checkbox"/> Education <input type="checkbox"/> Safety <input type="checkbox"/> Predictability <input type="checkbox"/> Choice 	<p>These principles are the foundation of our approach to care of cats with IC.²² Most of our pet cats are confined indoors, a bit like in our colony, so we help clients understand "how cats are" and why confined cats, like all mammals, need safety and predictability to thrive. One might ask about just letting the cats go outdoors, and that can work, but there also are outdoor threats to keep them safe from, like cars, other animals, and people. We then coach clients to use this information to create more enriched home environments for their cats. We also help clients learn to introduce changes (like food, litter, etc.) as choices so the cat can show them what she does and doesn't like. This approach to care has been found clinically effective by many others, and is now the standard of care for IC in cats worldwide.²³ I put the principles here because cats' social structure is completely different from ours. Cats evolved to need other cats primarily for mating and maternal care, and are independent of them the rest of the time, although they can live with each other under the right circumstances.</p>
<p>20</p>	<p>How This Might Help Us</p> <ul style="list-style-type: none"> <input type="checkbox"/> Education <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Social connection <input type="checkbox"/> Predictability <input type="checkbox"/> Choice 	<p>As I mentioned in the introduction, we humans are ultra-social mammals, and need social connection to survive and thrive. This recent (2023) report by our U.S. Surgeon General describes what he sees as an epidemic of loneliness in the USA, explains the health effects of loneliness and isolation, and offers ways to improve our social connections and health.^b</p>
<p>21</p>	<p>Social Connection</p> <ul style="list-style-type: none"> • Find or be a helper • Surround yourself with support, <i>positive, hopeful</i> support • Intimacy issues? Try NPR kink • Recover like an athlete 	<p>Research is also beginning to study the value of positive social support on people with chronic pain, but this could take a generation to become standard medical practice.²⁴⁻²⁶ In fact, the NIH are recently required implementation plans to be included in research proposals because of the "17-year gap" between research results and adoption into everyday clinical practice. Positive social support includes care and empathy, being listened to, practical help with daily activities, and offering useful advice, which improves emotional and psychological well-being, and pain coping and management skills. Inadequate social connections and increased loneliness can lead to poorer physical health and lower overall well-being, particularly among those with chronic pain. Unfortunately, there are very few treatments that address the need for social support, and those due</p>

^b [The U.S. Surgeon General's Advisory on the Healing Effects of Social Connection and Community](#)

		<p>are still inaccessible to the majority of people with chronic pain.²⁶</p> <p>Until there are, I would help my family member, and it can be anyone who loves, believes, and trusts you, to re-build the social connections lost to IC, including intimacy.</p> <p>I would also try to help them understand that recovery takes time and effort, just like an athlete recovering from a severe injury, and that I will be there for support and coaching if they want it every step of the way.</p>
22	<p style="text-align: center;">Your Choice</p> <p>Playing the waiter</p> <ul style="list-style-type: none"> • What works for others might work for you - or not. • Choose ONE thing to start with, and pace yourself. <p>Playing the cook</p> <ul style="list-style-type: none"> • Find a recipe that looks good to you • Practice! Good cooking takes time 	<p>I have provided a list of resources in the notes to offer you a menu of ways to help you get at least some of your life back, but like chronic pain, what promotes recovery is as individual one's experience of pain. If you choose an approach that appeals to you, the next steps are to "plan your work and then work your plan" to make it part of your life, like an athlete training for success.</p>
23	<p style="text-align: center;">My Hope for You – is hope! 🍌</p> <ul style="list-style-type: none"> • IC (all chronic pain) sucks. • I love you, believe you, & trust you. • We are ultra-social mammals. • How far can we get, together? 	<p>This is what I would tell a member of my family. If you have ideas I've missed to help others cope with IC please put them in the chat ! so we can start helping each other together!</p>
24	 <div style="border: 1px solid #ccc; padding: 10px; width: fit-content; margin-left: auto; margin-right: auto;"> <p style="text-align: center;">Learning to THRIVE (L2T) Program</p> <p style="text-align: center; font-size: small; color: #007bff;">START COURSE</p> </div>	<p>With the support of the ICA, Laura Santurri, Renee Hetzler, and I are developing and testing a group-based educational support program to help people with IC and other COPCs recover from the impacts of chronic pain. We're hoping to share more information about this program with you in the next six months.</p>
25	<p style="text-align: center;">You can help us learn more!</p> <p>Please participate in this anonymous, IRB-approved (UC Davis) online survey to study the effects of social factors on IC/BPS. You can access it using the QR code at the right. The survey takes 10-15 minutes to complete, and you can decline to answer any questions or stop taking the survey at any time. If you have any questions about this research, please contact me at drbuffington@ucdavis.edu.</p> 	<p>And I am trying to learn more about social effects on IC. If you want to help you can scan this QR Code. I will also put this link in the chat that you can use to go to the survey directly.</p> <p>https://ucdavis.co1.qualtrics.com/jfe/form/SV_7ZGPMbC218LNs4C</p>
26	<p style="text-align: center;">Thank you!</p> <ul style="list-style-type: none"> • Questions? • Ideas? • Help? 	

Resources to Consider

Books

- [The Pain Management Workbook](#), Rachel Zoffness, PhD, 2020
 - The Ezra Klein interview with her is worth listening to [HERE](#)
- [The Pain Survival Guide](#), Revised Edition. Dennis Turk, PhD, 2020
- [Unlearn Your Pain](#), 4th Edition Howard Schubiner, MD, 2022
- [They Can't Find Anything Wrong](#), David D. Clarke, MD, 2021
- [The Way Out](#), Alan Gordon, LISW, 2021
- [The Relaxation and Stress Reduction Workbook](#) 7th Edition. Martha Davis, PhD, 2019
- [Finding Your Best Self, Revised Edition](#). Lisa Najavits, PhD

Apps

- [The Curable app](#)
- [Unwinding Anxiety](#)

Websites

- [Chronic pain and relationships](#)
- [Communicating with your doctor](#)
- [Talking with your doctor](#)
- [How to talk so doctors will listen](#)

Many more!

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