

COMPASSIONATOMY

“We uncovered his face last, as it was the part of the body that makes us the most human, where we derive the most connection from when observing others. His expression looked at peace. I felt honored to be in his presence: this man whose body withered from a terrible disease in a tumultuous time in the world, yet made his final wish a selfless one so that we could learn from him. Anatomy felt like a lifeline for me this year. There were many hours of isolation with just myself and endless facts that I had to memorize. Anatomy gave me a rare chance in the week to form connections, with my classmates and with this donor, my very first patient. It made me feel less alone.

And for that I will be forever thankful.”

– Compassionatomy student reflection

The foundational anatomy lab course for all first-year medical students at the University of California, San Diego (UCSD) School of Medicine has transformed over the last two years to include explicit humanistic and compassionate skill-building practices to give students long-lasting skills to grow into empathic, caring providers. Anatomy lab is a difficult experience for many reasons: the potential first experience with a deceased person’s body, overwhelming emotions related to dying and end-of-life issues, and anxiety about performing dissection practices. Traditionally, many anatomy courses promote anonymity for the deceased, detached regard for the “human cadaver”, and mastery of basic science knowledge.

Our anatomy course, **Compassionatomy**, flips that script, however. We promote engagement with the body donor (not cadaver or specimen) as the first patient, awareness and acknowledgement of the difficult emotions that arise, gratitude for the donor, curiosity and awe for the learning experience, and development of empathy and compassion for self and others in a supportive learning community.

What is Compassionatomy?

Just prior to the 2021-2022 academic year, the [T. Denny Sanford Institute for Empathy and Compassion](#), the [Compassion Institute](#), and the [Chief of the Division of Anatomy at the UCSD School of Medicine](#) collaborated to develop and implement a project to bring more humanity to the anatomy lab experience. In the 2021-2022 academic year, compassion practices were included in a handful of the traditionally more difficult anatomy labs for students (face, hands, chest wall, etc.). In the 2022-2023 academic year, the anatomy lab course truly became Compassionatomy, with compassion practices in all 22 labs. Compassionatomy combines the scientific learning from a body donor, including surgical, patient-centered approaches, with the learning, cultivation, and practice of compassion for self and others. The compassion training portion of anatomy lab includes:

- Approximately ten minutes of explicit practices facilitated by our Chief of the Division of Surgery, Dr. Geoffroy Noel, at the beginning of each lab session. Labs typically run about three hours, and while time for the practices is established at the beginning of each session,

reminders of and references to the practices are incorporated throughout each lab. As a result, the culture and environment of the lab become markedly different.

- Practices, developed by the Compassion Institute, generally fall into three categories:
 1. **Foundational:** help students regulate their nervous system and to stay present/curious
 2. **Compassion/Self-Compassion:** help students cultivate a sense of connection and care
 3. **Perspective:** help students reframe or broaden their perspective to one that is less self-referential and rooted in prosocial qualities and views, such as gratitude, awe, and sense of meaning that is larger than oneself.
- Practices include a guided exercise in noticing, cultivating, and connecting, brief psychoeducation behind the practice, and reflective writing prompts at the end of the lab session.

What is the research behind Compassionatomy?

Methods:

Over the course of two years, compassion training (CT) was incorporated in the pre-clinical anatomy thread at UCSD for all first-year medical students. All students were invited to participate in a pre- and post- program evaluation at the beginning and end of the academic year assessing empathy using the Jefferson Scale for Empathy (JSE), and after each anatomy session in longitudinal post-session surveys assessing identification with the donor using the Inclusion of Other in the Self scale (IOS), arousal and pleasure using an affective slider, and engagement with contemplative practices during and after the lab by asking: "How engaged were you in compassion practices during today's anatomy lab?/ In the past week, how much did you use the compassion practices you have experienced in anatomy outside of anatomy lab?"

In the first study year in academic year 2021-2022, all first-year medical students at UCSD (n=140) experienced CT (10-15 minutes, combinations of contemplative themes related to a prosocial quality, guided contemplative exercises and/or on-the-spot practices) in eight out of 20 anatomy labs. Longitudinal study participants (n=36) completed session evaluations after all labs, including those with and without CT.

Results:

- Identification with the body donor increased significantly over the year and identification was significantly higher after CT sessions than non-CT sessions. (See Fig. 1.)
- Greater identification with the donor was associated with higher pleasure but not arousal.
- Levels of engagement with CT in the lab sessions increased over the year and were higher during sessions with vs. without CT.
- Levels of self-reported empathy (assessed by JSE) were very high in all study participants, and Compassionatomy did not seem to further enhance empathy from before to after the course or compared to a previous cohort who did not experience Compassionatomy.

Fig. 1.

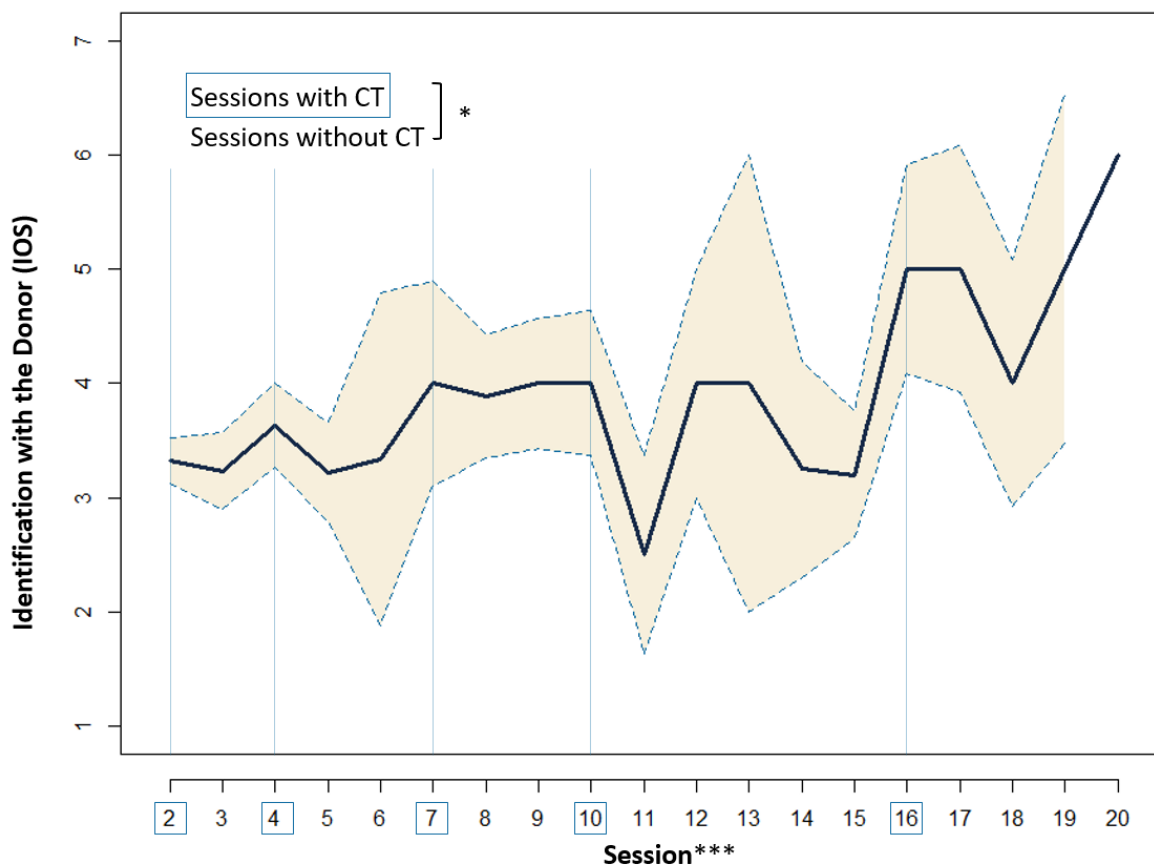


Fig. 1 Legend: Identification with the donor (assessed by IOS: higher values indicate more connection with body donor) across the academic year: bold line indicates mean, yellow shaded area reflects standard error). *: $p < 0.05$ for main effect of CT, ***: $p < 0.001$ for main effect of session.

In the second study year in academic year 2022-2023, CT is delivered in all sessions throughout the academic year and the exams are redesigned to allow for more mindful transitions between tasks. Further, the optimal presentation of body donors to foster empathy and inclusion will be studied by not deidentifying body donors and by sharing their personal stories.

What have we learned from the research so far?

- With Compassionately, students identified more and more with body donors over the academic year and particularly after formal CT, which was associated with more post-session pleasure and no heightened arousal. This might indicate a beneficial effect of compassion training on student well-being via increasing empathy and compassion.
- Incorporating CT into lab sessions increased students' engagement with compassion practices, demonstrating the value of incorporating formal CT in all lab sessions.
- The absence of differences in empathy measures from before to after the course might reflect the high level of empathy that study participants already reported before the course and warrants further investigation in the second study year.

- Qualitatively, we found that students' maintenance of the integrity of the donor after each session and across the course was noticeably higher, and students often were observed putting a comforting hand on the donor during procedures.
- In addition, many students suggested that we increase the frequency of CT and incorporate more exercises during examinations when they had to interact with other donors with whom they had not formed a bond.

These encouraging findings informed plans for our second study year, and provided incentive to bring Compassionatomy to students at other institutions.

How do I bring Compassionatomy to my institution?

We recognize that while there are many commonalities in anatomy courses around the country, each one will also be unique. If you are interested in transitioning your anatomy course to Compassionatomy by incorporating more humanistic and compassionate practices, we can collaborate with you to co-develop Compassionatomy at your institution. Co-development will also be unique for each partner, but could include:

- Supportive, co-development process with Sanford Institute, Compassion Institute, and UCSD Compassionatomy experts
- Time-limited support for identified needs (i.e. fiscal, research, etc.) for a pilot project
- Provision of course materials for adaptation, including a resource manual with all practices and reflective writing prompts, and PowerPoint slides for each session
- Initial and ongoing coaching/training for the course facilitator(s) to provide them with a thorough foundation with the contemplative practices and to adapt practices throughout the course
- Provision of research and evaluation guidance for the implementation process and outcomes of pilot testing

Interested in learning more? Please contact Jenna Tutjer, Director of Medical Education Integration at Sanford Institute, at jtutjer@health.ucsd.edu.

APPENDIX:

SAMPLE COMPASSIONATOMY PRACTICE FOR CHEST WALL LAB SESSION

Psychoeducation and instructions, given by course facilitator:

- As we progress in the dissection, you may find yourself feeling strong emotions or starting to dehumanize the body. It is very normal and common to feel this way.
- In this practice, we'll (1) train ourselves to stay fully present to the patient in front of us with a sense of curiosity and wonder, and (2) practice intention setting in order to show up as our best selves.
- Through curiosity and wonder, we're cultivating healthy clinical detachment. Clinical detachment does not mean we're being self-protective and closing ourselves off to connection and emotions.
- On the contrary, we're embracing in a mindset of discovery, the awesome beauty of the human body. This openness will help us to be fully present for our patients, and allow us metabolize emotions that may come up, rather than suppressing them.
- Simply put, open curiosity → more presence, connection, fulfillment
- In this practice, we'll use our sense of sight and touch to cultivate a state of curiosity rather than reactivity.
- Connecting with purpose and setting intentions helps us to remember what's really important to us, and guides us to choose to show up in the way we want, rather than rush from one thing to another mindlessly.

Curiosity and wonder cultivation practice, led by course facilitator:

- As we start the practice, I invite you to close the eyes if that feels helpful as you start to direct your attention inward...
- Take a moment to ground... Feel the weight of your body supported by the earth at your feet... Or the chair at your seat... Or lap / table at your hand... [Pause, give students a few moments to ground]
- When you're ready, slowly let your eyelids open as you take in the sight of your body donor...
- Choosing to focus on the chest area – notice the colors, textures, shapes of the skin and chest as if you were seeing everything for the first time... with a sense of curiosity and wonder... [Pause]
- If your mind starts generating commentaries about the practice or anything else, just notice your thoughts like a scientist observing passing clouds in the sky... [Short pause] and come back to a curious, spacious state of mind – simply noticing the colors, textures, shapes... [Pause]
- How wondrous that we all have skin to hold our bodies together – you're looking at the organ with the largest surface area... [Pause]
- Now I invite you to gently touch a part of the body donor, and pay full attention to the tactile sensations – firmness, shapes of the muscles, temperature, texture of the tissue and skin... Now move your hands around slowly to touch different parts of the body, just noticing the tactile sensations... If you find your mind generating thoughts about this or that, again, just notice those thoughts like observing passing clouds in the sky... and come back home to your sense of touch... [Pause]

Intention setting practice, led by course facilitator:

- Now I invite you to close the eyes, grounding again – feeling your feet on the ground, or seat on the chair... [Pause] And bring to mind the letter you wrote to your donor in the first lab session...
- Recall what you wrote in response to these questions...
 - a. Why you came to medical school [Pause]
 - b. Why having the opportunity to dissect a real human body is meaningful to you, and what you hope to learn. [Pause]
- Now having checked in with your sense of purpose for being here today, take a moment to set an intention for this lab session – how would you like to show up for this session? With curiosity, kindness toward the donor, as a supportive lab mate... whatever comes to mind. [Pause]
- As we come to the end of the practice, taking a moment to notice how you feel now in the body and mind...
- When you're ready, opening the eyes and bringing your awareness back to the room and everyone here...
- Today we'll simulate a thoracotomy and get more hands on in the dissection.
- Feel free to ground or resource whenever that would be helpful.
- And see if you can stay open and curious, moment to moment. It's an incredible privilege that we get to be here to learn about the human anatomy in this way.