



***AN EXPLORATION OF GREEN
BURIAL IN THE NATURAL DEATH
CARE MOVEMENT***

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**PALLIATIVE MEDICINE
END OF LIFE SYMPOSIUM**

DISCLOSURES

I do not have anything to disclose.

Objective

- Explore the economic and eco-friendly mediums of green burial
- Explore how the Natural Death Care Movement is revolutionizing an ecological, sociocultural and spiritual connection in our inevitable passage toward organic death and decay

“It is uncertain when or how we will die. We can find meaning in our lives by making every moment an “opportunity to change and to prepare--wholeheartedly, precisely, and with peace of mind--for death and eternity.”—
Tibetan Book of Living and Dying

The Death Positive Movement

- Caitlin Doughty:
<http://www.orderofthegooddeath.com/>



In 2011, Caitlin Doughty founded The Order of the Good Death--a collaboration of funeral care professionals, academics and artists, who advocate for acceptance of death as natural, breaking down barriers to access of a “good death.”

Death Positive Movement Continued

- A social justice movement promoting end of life and death care that aligns with an individual's goals and values
- Mediums of green burial such as home funerals, natural burial, and reformation have transcended into the Death Positive Movement

Introduction to Death Positivity and Natural Death Care

- Discussion of death care plays a fundamental role in our acceptance of susceptibility to inevitable death and decay
- From Buddhist teachings we learn that if we are prepared, there is tremendous hope, both in life and death

Preparing for Death Care

- address our vision of what would be satisfying and feel right
- how do you want your body to be handled?
- Would you like to be washed, dressed, and handled with love and kindness by a loved one or handed over to a funeral home?
- What type of shroud would you want?
- Where would you want your loved ones to gather to honor your life and death?
- How do you want your funeral to look and feel like for will gather in honor?

Modern Burial



- Embraced by many cultures and religions as desired method for corpse disposal
- lawn park cemeteries history has transcended over two centuries because of increased economic wealth in urban areas.

Modern Burial Continued

- Eternally manicured appearance eventually transformed into a retreat place of socio cultural and spiritual significance
- Cemeteries play an important role in the grieving process, a place of connection and remembrance for the dead.

Environmental Impact of Modern Burial

- U.S. practice of burying embalmed cadavers in a lawn park cemetery is not environmentally sustainable.
- consumes significant resources for caskets and vaults
- Introduction of toxins into the environment—embalming fluids used to preserve bodies to the petrochemicals needed to maintain manicured landscapes

Ecological Effects of Modern Burial

- **Burials in the United States :**
- 4.3 million gallons embalming fluid, 827,060 gallons of which is formaldehyde, methanol, and benzene
- 20 million board feet of hardwoods, including rainforest woods
- 1.6 million tons of concrete
- 17,000 tons of copper and bronze
- 64,500 tons of steel
- Caskets and vaults leaching iron, copper, lead, zinc, and cobalt

Toxic Effects on health of funeral industry professionals

- 13% higher death rate for embalmers
- 8 x higher risk of leukemia than the general population
- Higher than average incidence of COPD, respiratory diseases, and neurological disorders among maintenance workers



Economic Impact of Annual Corpse Disposal

- An average estimate of a modern funeral and burial in the United States is anywhere from \$6,000 to \$10,000, depending on the level of service add-ons
- In 2019, there were 34.0 million people in poverty, with 10.5% of the US population living under the poverty line.
- 63% of Americans say they were living paycheck to paycheck since the Covid-19 pandemic hit the U.S
- According to WHO and CDC, there were over half a million COVID-19 deaths in the U.S.
- If these half million received a traditional funeral and burial, an approximate 3-6 million dollars contributed to the multibillion dollar funeral industry in 1 year alone.

Cremation



- After the 1963 publication of *The American Way of Death*, cremation grew in popularity
- 50% cheaper than modern burial
- minimal planning pre and post mortem
- Feasibility of transporting and storing cremains
- Standard direct cremation costs approximately \$2,000

Ecological Impact of Cremation

- average cremation uses 28 gallons of fuel to burn a single body, emitting about 540 pounds of carbon dioxide into the atmosphere. That's about 250,000 tons of CO₂ each year
- emission of these greenhouse gasses negatively contribute to climate change
- U.S. Crematoriums use filtering systems, such as after-chambers that burn and neutralize pollutants like mercury emissions from dental fillings, however the carbon emissions are not filtered

Ecological Impact of Cremation

- cremation ashes are not fertilizer
- Contain the byproduct of mostly former bones, tricalcium phosphate—not conducive to healthy plant life
- cremated remains on their own are not capable of further decomposing without enzyme reduction



Bone fragments & the cremation ashes are ground to form a grey/white powdery matter

Sustainable, Sociocultural, Spiritual and Environmentally Conscientious Death Care

- Green Burial—Reformation and Natural Burial
- Alkaline Hydrolysis
- Home Burial

The Green Burial Movement

- In 2007, Ed Bixby, became one of the original advocates for the Green Burial Movement and owner of Steelman Town National Cemetery.



- Protest modernized funeral standard.
- Felt environmentally and spiritually appealing alternative funeral rights needed to be offered, based on families' experience
- encompasses the opening of our minds, bodies, and souls to the ritual of returning our bodies back to the earth, where mourning and nature meet

The Green Burial Movement

- Since 2007, the Green Burial Council, the Funeral Consumer Alliance, and the National Home Funeral Alliance, have standardized the rapidly growing movement of green death care



Green Burial Grounds

Green Burial Council sets the standards:

- **Hybrid Burial Grounds:** conventional cemeteries offering the option for burial without a vault, concrete or liner. They shall not require embalming and must allow for eco-friendly burial containers, including shrouds.
- **Natural Burial Grounds:** adopt practices of no embalming fluids, biodegradable casket, no vault energy conservation, minimizing waste production, and prohibiting the use of toxic chemicals. It also must incorporate Integrated Pest Management as well as incorporate a natural landscape based on native plants and materials compatible with regional ecosystems.
- **Conservation Burial Grounds:** Meets all the requirements of the natural burial ground as well as perpetuate land conservation.

Full List of Green Burial Sites: <https://www.nhfuneral.org/green-burial-cemeteries-in-the-us-and-canada.html>.

Natural Burial

- using natural burial can fund land conservation and create wildlife preserves
- bereaved family and friends the ritual of being directly involved in the process, lowering the body in the ground, covering the grave.
- Conservational burial preserves also have the potential to serve as multifunctional greenspaces

Ramsey Creek Preserve, Westminster, South Carolina

- Featured in documentary *Dying Green* by Ellen Trippler
- Dr. Billy Campbell, a family medicine physician, and his wife Kimberley Campbell share their passion as founders of one of the first natural burial grounds
- eco-responsible burial rituals, creation of memorial landscapes and natural areas of high ecological quality and social value



Reformation (Natural Organic Reduction)

- In 2019, Washington became the first state in the US to legalize human composting
- turns bodies into soil within approximately 30 days
- Cost is about \$5,000, between the cost of cremation and traditional funeral burial



Recompose in Washington

- Body is laid on top of a barrel-shaped vessel filled with a carbon and nitrogen mixture of wood chips, alfalfa and straw, then covered with the same mixture and enclosed in the vessel. A fan system is set up to ensure the microbes are oxygenated, promoting decomposition of the body into two wheelbarrows of soil within a month.
- soil material yielded as fine, nonmalodorous, larger diameter potting soil.
- alternative to eco-toxic traditional burial or the carbon footprint of cremation by alleviating the problem of burial space.

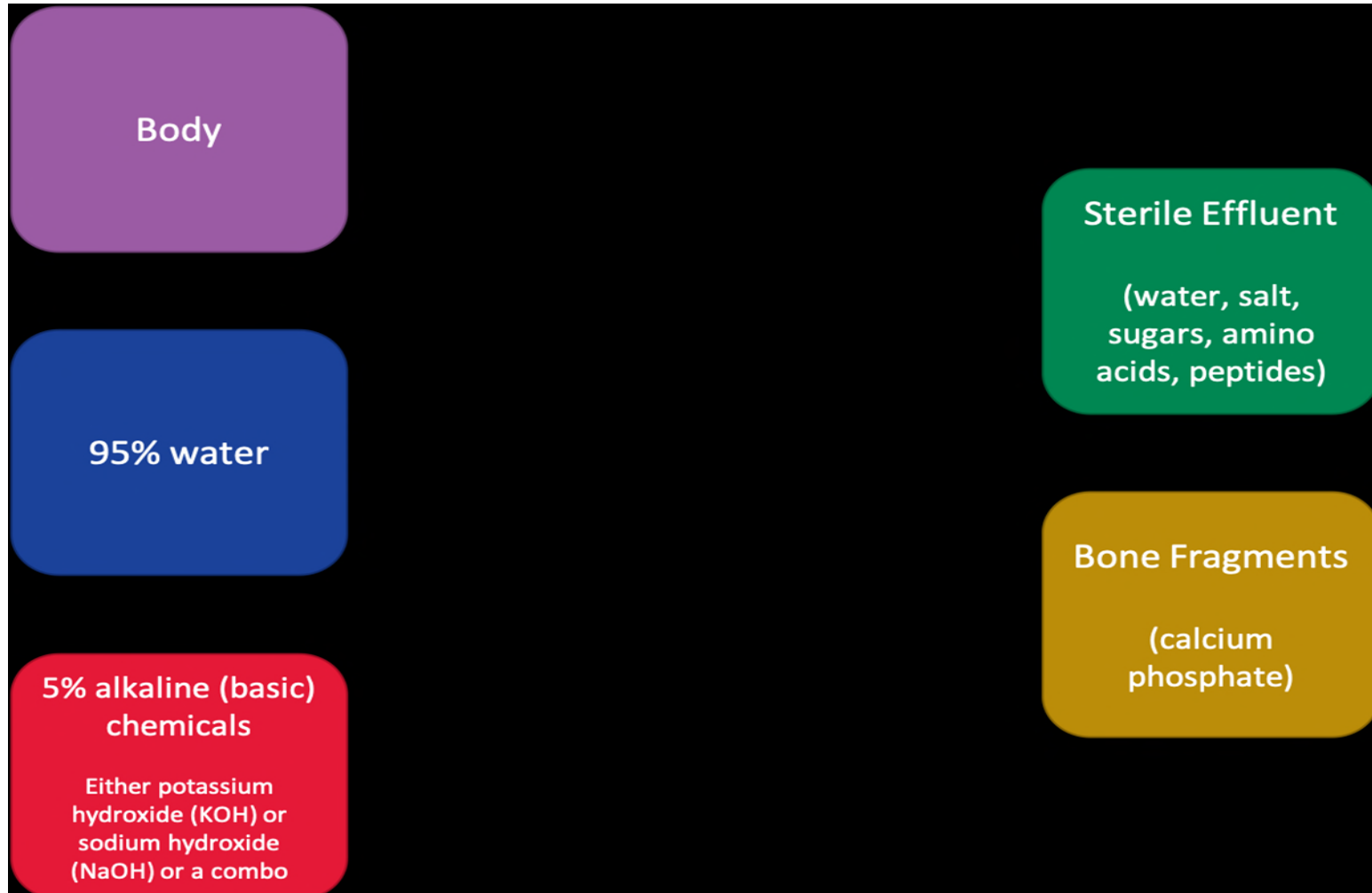
Reformation Continued

- Some of the people who volunteered during the study desired to give back whatever nutrients they have in their bodies when they die, to nurture the earth that gave them life rather than burn that nutrient up through cremation or bury it in a vault
- In 2020, at the height of the COVID-19 pandemic, California Assembly member Cristina Garcia introduced legislation to give California residents the legal option to have their bodies composted.

Alkaline Hydrolysis (Water Cremation)

- In California, the UCLA Donated Body Program uses alkaline hydrolysis. According to their website, “the sterile process prevents the release of emissions into the atmosphere and helps protect the earth's natural resource...The remaining sterile ash is scattered in the ocean.”
- Alkaline hydrolysis uses water, alkaline chemicals, heat, and sometimes pressure and agitation, to accelerate natural decomposition, leaving bone fragments and a neutral liquid called effluent

Alkaline Hydrolysis



Benefits of Alkaline Hydrolysis

- No mercury emissions/no abatement
- Reduced carbon footprint
- Low energy costs, minimum energy requirements
- No air emissions discharge
- Safe with no harmful chemical or microbial contaminants

In Summary

- Green Burial Movement is part of a growing complex ecological, sociocultural and spiritual movement of Natural Death Care, advocating for collaboration by the government, funeral industry, and the public.
- The movement is making bold moves towards an earth-based, sustainable end of life option where there is appreciation and value in the ritual of integral death and decay
- Death care planning should be integrated, further promoting advocacy of death positivity, ensuring empowerment (if wished) to be involved in care for our own dead

In Summary

Ashes to ashes, cell by cell, molecule by molecule, may we transform into something beautiful in our natural return to earth, which all living things ultimately return.



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